

# Chomsky's Methodological Naturalism

*And Its Bearing on Referential Semantics*

*by*

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# Abstract

Noam Chomsky's theories and insights have had a huge impact on linguistics, philosophy and other branches of cognitive science. The idea of the human faculty of language as a specialized mental organ and the insistence on treating linguistics as a part of natural science have in many ways revolutionized our understanding of language and the mind. In *New Horizons in the Study of Language and Mind* (2000), he makes two claims with which this thesis is concerned. First, that the study of language should be approached in accordance with what he coins methodological naturalism. Second, that referential semantics is deeply flawed. This thesis unpacks and assesses the arguments for these claims, and then argues that they do not succeed in threatening referential semantics.

I begin by providing a map of methodological naturalism and the Chomskyan view of language. I hold that Chomsky is right that a purely naturalistic approach is valuable to linguistics. On the other hand, I argue that the demand that philosophical accounts of language must also accept and work within the doctrines of methodological naturalism is unwarranted. Against this background, I assess three specific Chomskyan arguments against referential semantics. These arguments touch on ontological concerns which go over and beyond the methodological issues. According to Chomsky, the things humans talk about have such intricate properties that it cannot plausibly be the case that words refer to things in the world. I argue that these ontological arguments presuppose too much on behalf of referential semantics. Therefore, I conclude that Chomsky's strongest case against referential semantics lies in his methodological arguments, but that the ramifications of these arguments are limited to naturalistic theories.



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# 1 Methodological Naturalism

Let us understand the term “naturalism” without metaphysical connotations; a “naturalistic approach” to the mind investigates mental aspects of the world as we do any others, seeking to construct intelligible explanatory theories, with the hope of eventual integration with the “core” natural sciences. (Chomsky, 2000, p. 76)

The idea that the study of language should be pursued as a science (just like psychology, biology and physics) is a recurring theme in Chomsky’s (and his proponents’) writings. Chomsky has coined this naturalistic approach to language and mind *methodological naturalism* (hereon abbreviated to MN). Some have suggested that Chomsky’s advocacy of internalist semantics and an I-language notion of language can be traced directly back to his endorsement of MN (see Stainton, 2008 and Collins, 2009). Whether or not this is correct, MN seems to be tightly connected to Chomsky’s overall views of language, and as such serves as an important framework from within which Chomskyan linguistics operates.

Let us therefore start by getting a clearer picture of this form of naturalism. What do we commit ourselves to if we accept this doctrine? It is to be hoped that this will give us a good background for further discussion. In what follows, I will take as my point of departure the characterization of MN given by Chomsky in the introductory quote, and simply elaborate on it. Two things are important to note at this stage. Firstly, MN is taken to apply to the study of language and mind, but for the purpose of this essay, I will mostly focus on methodological naturalism as pertaining to language. Thus, most of what is said about MN in language can also be said of the study of the mind in general. Secondly, in what follows I will deal with the *methodological* foundation on which Chomsky’s view of language is based. A presentation of other relevant aspects of Chomskyan linguistics will be provided in the next chapter.

As the introductory quote reveals, MN involves at least three core ideas: That the study of mental (and linguistic) phenomena should be approached in the same way as we approach other aspects of “the natural world”, that our aim is to provide theories that have explanatory (as opposed to merely descriptive) value, and that we seek to integrate these theories with theories in the “core” natural sciences. As we will see, there are several important implications of these ideas.

## 1.1 Methodology, not Metaphysics

MN is taken to be a purely methodological doctrine, and as such it differs in important ways from various forms of metaphysical or epistemological naturalism (to mention but a few: eliminative materialism, various forms of physicalism and Quine's "epistemology naturalized") (Chomsky, 2000, p. 79-85). Hence, MN is not in itself a doctrine about what things there are in the world and what the nature of these things are, nor about how we can gain knowledge of them. As John Collins puts it: "[Methodological naturalism] carries no substantive commitments as to what the natural world contains nor how it is organized; rather, it constitutes a set of working assumptions as to how we ought to investigate phenomena." (Collins, 2008, p. 16)

In his *New Horizons in the Study of Language and Mind* (2000) (hereon abbreviated to NH), Chomsky criticizes these alternative forms of naturalism. Chomsky argues that metaphysical forms of naturalism are deeply problematic and arrives at the radical conclusion that these positions cannot even be coherently stated. A thorough review of this debate lies outside the scope of this essay, but we will allow a brief surface-level look at what he has to say about some traditional conceptions of naturalism. Epistemic naturalism, if viewed simply as a scientific, empirical theory of the mind (along the lines of Hume's project in the eighteenth century), is according to Chomsky a fruitful enterprise. It is the contemporary versions he finds worthy of critique: Quine's "Epistemology naturalized" is, in his view, grounded in behaviourist psychology and uninteresting to science. Furthermore, if we understand epistemic naturalism as a philosophical position, rather than "normal science", we admit of the possibility of an alternative to the naturalistic approach. This philosophical position of epistemic naturalism would be analogous to "visual naturalism", to which we could conceive of a non-naturalist alternative. But, Chomsky maintains, just as there is no viable non-scientific alternative to the empirical study of the visual system, there is no coherent alternative to the empirical study of the mind (Chomsky, 2000, p. 80-91).

Metaphysical naturalism is in an even worse condition, Chomsky maintains. The reason why is, in short, that ever since Newton's discoveries rejected the mechanical theory, there has been no coherent notion of "body", or "the physical" that can set it apart from mind:

Newton eliminated the problem of "the ghost in the machine" by exorcising the machine; the ghost was unaffected. ... The mind-body problem disappeared, and can be resurrected, if at all, only by producing

a new notion of body (material, physical, etc.) to replace the one that was abandoned; hardly a reasonable enterprise, it would seem. (Chomsky, 2000, p. 84)

In other words, we have no notion of “the physical” apart from a collection of things we understand about the world and theories about those things that we seek to unify. Consequently, then, any attempt to formulate “physicalist positions”, such as eliminative materialism, is futile (Chomsky, 2000, p. 85).

To sum up, methodological naturalism is seen by Chomsky as the only viable form of naturalism, and it should not be understood as a metaphysical or epistemological doctrine. One question arises at this point, however, because one could ask whether MN does not have any bearings on metaphysical or epistemological views, that is, whether MN is a metaphysically and epistemologically *neutral* position, as the quote from Collins suggests. The answer to this, of course, depends on what we mean by neutral in this context. In a sense, it seems reasonable to understand MN as strictly methodological; it is a doctrine about how, and, as it were, in what spirit, we should initially approach phenomena in order to gain theoretical insight. As such, it contains no more than a recipe for science. However, one should not on the basis of this take a leap to the conclusion that once we adopt MN, our discoveries and theories may not yield theories which have bearings on epistemological or metaphysical views. Chomsky’s argument against physicalism seems to be a case in point: If we adopt MN, we discover that there is no coherent scientific notion of the “physical”, and therefore we should, at least for now, reject physicalist metaphysics. It is important to note, however, that even though this argument (which does not follow from MN directly, but indirectly in the sense that scientists using this methodology have come up with such theories) suggests that a certain metaphysical theory may be based on a wrong premise, this still does not tell us anything about what metaphysical entities there are. It does not tell us that reality is not restricted to the entities postulated by physics. Rather, it argues from the fact that a certain debate within metaphysics makes use of dubious concepts. Likewise, one could argue that MN does indeed have certain bearings on epistemological views, seeing that MN is a doctrine about how we can best gain knowledge about the world (including language and other mental aspects of the world). So MN would seem to require at least that it is possible to gain knowledge of the external world.

## 1.2 Methodological Monism

Chomsky advocates a view in which the study of language is a part of “naturalistic inquiry” (see for instance Chomsky, 2000, p. 76-78, Chomsky, 2000, p. 106). There is thus no principled methodological difference between the study of language (or mind) and inquiries into other aspects of nature: elementary particles, the visual system of humans, chemistry and so on. In this view, then, language is seen as a natural phenomenon (as opposed to, for example, an artificial or cultural construct), calling for scientific methodology. This sets this enterprise apart from traditional philosophical projects, such as “rational reconstruction” or describing “knowledge which would suffice for interpreting” (Stainton, 2008, p. 914). As John Collins points out, one of the most important aspects about MN is that it is monistic, that is, if we accept MN we agree to approach all phenomena, language being no exception, initially in the same way (Collins, 2008, p. 16). The word “initially” is important here, because this monism must not be understood as implying the clearly false conclusion that language should be studied in the exact same manner as physics, say. There are obvious differences between these phenomena, justifying different methods of investigation. All that is claimed is that initially, that is, prior to investigation, we should approach language in the same spirit as we approach other natural phenomena. Methodological differences will emerge, but they are arrived at, not set up in advance. Thus, as Stainton writes: “... since the sciences in general take their evidence wherever they can find it, there can be, for the methodological naturalist, no *a priori* restrictions on evidence in psychology or linguistics.” (Stainton, 2008, p. 915) The way I understand Chomsky, he thinks that language should be studied empirically, and that linguistic theories should be judged by the same general criteria as any other science. Hence, a good linguistic theory both describes and explains the empirical data.

At first glance, it might seem as if there is an inconsistency in treating language as a natural phenomenon on one hand, and rejecting (as we have seen) any metaphysical claims about the object of study on the other. Is Chomsky not, by advocating a view of language as a natural phenomenon, making a metaphysical claim about language? I think this tension only occurs if we read more into the notion of “natural phenomenon” than is intended on Chomsky’s part. Arguably, “natural phenomenon” here is not meant to be a metaphysically loaded notion; rather, it is to be understood simply as a way of describing scientific practice. Still, this metaphysical modesty might be contested, for it seems reasonable to say that Chomsky views language as a naturally occurring phenomenon that has something to do with the brain. We

will look more into this in the next chapter, but let us at this juncture assume that this minimal metaphysical commitment is acceptable.

One worry about this approach is that a purely naturalistic account of language, modelled on theories in “the hard sciences” will fall short of answers to many important questions. Both Searle and Dummett, for instance, argue that awareness is a crucial condition for our mastery of language, and Chomsky seems to offer little in this department (Chomsky, 2000, p. 94). According to Chomsky, however, we cannot stipulate that the study of language should answer questions about (for instance) awareness or self-knowledge. He writes:

In the study of other aspects of the world, we are satisfied with “best theory” arguments, and there is no privileged category of evidence that provides criteria for theoretical constructions. In the study of language and mind, [it is believed that] naturalistic theory does not suffice: we must seek “philosophical explanations,” delimit inquiry in terms of some imposed criterion, require that theoretical posits be grounded in categories of evidence selected by the philosopher, and rely on notions such as “access in principle” that have no place in naturalistic inquiry. Whatever all this means, there is a demand beyond naturalism, a form of dualism that remains to be explained and justified. (Chomsky, 2000, p. 142)

If we accept MN, we should not demand that the theories in naturalistic enquiry provide answers to philosophical questions or that they cohere with commonsense beliefs. We accept that theories in physics depart from pre-theoretical or common beliefs about the world, and that these theories do not employ commonsense notions like “apples” and “falling to the ground”, although the theories could be used to explain such phenomena. According to methodological naturalism, we should approach language and mind in the same manner. That is, in so far as we are seeking “theoretical understanding”: “I am keeping here to the quest for theoretical understanding, the specific kind of inquiry that seeks to account for some aspects of the world on the basis of usually hidden structures and explanatory principles.” (Chomsky 2000, p. 134) Methodological naturalism does not commit us to the thesis that this is the only way to gain knowledge of the world.

Plausibly, then, several of Chomsky’s methodological ideas are grounded in this idea of methodological monism, for instance the aim of explanatory insight and the idea that the theories need not adhere to either philosophical or commonsense conceptions of language.

We will turn to a presentation of Chomsky’s views on language in the next chapter, but it is relevant to say a few words at this stage about what Chomsky takes the object of study to be. What is it that should be studied in this particular way? In *Knowledge of Language* (1986),

Chomsky answers that in the view he advocates the object of study is the faculty of language, a genetically determined part of the human mind. In his view, it is not the products of behaviour (for example text corpora) which is the central *explanandum*, but rather the internal states of an individual:

We should, so it appears, think of knowledge of language as a certain state of the mind/brain, a relatively stable element in transitory mental states once it is attained; furthermore, as a state of some distinguishable faculty of the mind – the language faculty – with its specific properties, structure, and organization, one “module” of the mind. (Chomsky, 1986, p. 12-13)

The central task is, in short, to account for human knowledge of language. In other words, we seek to provide a theory of the competence of an individual who knows a language, as well as a characterization of the language faculty and an explanation of how it interacts with experience (Chomsky, 1986, p. 3). In this view, then, linguistics becomes a part of cognitive psychology. This differs from other approaches where the object of study is taken to be, for example, the nature of communication or knowledge of meaning in a common, public language.

## 1.3 Explanatory Theories

Chomsky stresses that in naturalistic inquiry, we want explanatory theories. That is, we want theories that do something more than just describe the phenomena; we want them to *explain* the phenomena. As it stands, this does not tell us much, but it will turn out that in the case of language, Chomsky has a distinctive type of explanatory theory in mind. I will turn to this issue more in depth in chapter two, but let me briefly sketch what I take to be the main idea.

In the case of language, we want a theory that satisfies two conditions: descriptive adequacy and explanatory adequacy. A theory of a language L (a grammar of L) is descriptively adequate if it gives a full account of what an idealized speaker of a language knows (that is, the properties (rules/principles) of the language). A theory of language is explanatorily adequate in so far as it shows “how each particular language can be derived from a uniform initial state under the “boundary conditions” set by experience.” (Chomsky, 1965, p. 24-26, Chomsky, 2000, p. 7) The latter theory corresponds to Universal Grammar (UG).<sup>1</sup> According

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<sup>1</sup> This distinction between descriptive adequacy and explanatory adequacy corresponds to two important and distinct questions. The first one asks what constitutes linguistic competence/knowledge, and could be answered by a descriptively adequate theory of language. The second question asks how such knowledge is acquired, and

to this view, then, the task of the linguist is not merely to give a taxonomy (much like Linnean botanics) of the rules of a language, but also to provide a theory that explains what makes these languages possible and how they can derive from the same system within the mind/brain.

This requirement for explanatory theories alters the focus of enquiry from sets of utterances to internal states of an individual. The details as to what this theory should look like will have to wait until the next chapter. For the time being, it suffices to note that this aim of explanatory adequacy is seen as a central part of MN, and that the desire for “explanatory theories” involves more than just explaining the empirical data, it involves explaining the data in a particular way.

Now, one question that arises in light of this requirement is whether this is one of Chomsky’s principal motivations behind MN. In my view, this is a plausible idea. As we will see, Chomskyan linguistics is an ambitious enterprise, aiming to explain the faculty of language, ultimately a part of the brain, at a computational level. This gives the theories a deep character, not unlike many other theories in the natural sciences, and this arguably commits one to a certain methodology. If this is right, we can see that the rest of the tenets of MN follow from the ambition to arrive at a deep, explanatory theory (rather than the other way around). It seems that it is perfectly fine to be a methodological naturalist without working within generative linguistics. However, the reverse seems less likely. For instance, it would not be fruitful to demand that the theory should be framed in terms of common sense notions. The pursuit of explanatory theories then, if understood as specific kinds of theories along the lines mentioned here, tells us something about the aim of Chomskyan linguistics and what it takes to be the object of study.

## **1.4 Integration with the “Core Natural Sciences”**

So far we have seen that if we are to study language within MN, there are important similarities between linguistics and other parts of the natural sciences (physics, for example). We approach the object of study initially in the same way, and we seek the same kind of deep,

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this could be answered by providing an explanatorily adequate theory in the way mentioned. (There is also a third fundamental question about language, namely how knowledge of language is put to use. See Chomsky, 1983, p. 3.)

explanatory theories. However, there is another link between the natural sciences and naturalistic study of language and mind.

If we work within the framework of MN, we seek to integrate our explanatory theories regarding language with other sciences. In other words, the explanations we come up with on the basis of the data should ultimately “match up” with explanations/theories in psychology, biology and physics. However, it is important to make two things clear. Firstly, such integration does not, according to Chomsky, necessarily involve reduction. There are different levels on which one can study the brain, and the computational-representational level at which Chomsky’s theories belong, need (indeed should) not use the same vocabulary as other theories that operate on different levels (molecule-level, for instance). Secondly, if the theories fail to match, it is not always the case that it is the most fundamental science (physics) that has got it right. Chomsky points out that throughout the history of science, it has happened more than once that “the more “fundamental” science has had to be revised, sometimes radically, for unification to proceed.” (Chomsky, 2000, p. 82) One example of this is the unification of chemistry and physics, where the quantum revolution in physics could accommodate Pauling’s (already existing, but not harmonious with physics of the day) theory of the chemical bond (Chomsky, 2000, p. 106). So the unification did not happen top-down. Similarly, there are tensions between computational level theories of the mind and neuroscience. (I will not go into detail here, but computational level theories have a discrete character, whilst research in neuroscience suggests that the variance of neural maps is not discrete.) Chomsky argues that such problems do not entail that it is the higher-order theories at the computational level that must be revised. In any case, unification remains at present a mere hope: “We do not know how eventual unification may proceed in this case, or if we have hit upon the right categories to seek to unify, or even if the question falls within our cognitive reach.” (Chomsky, 2000, p. 107)

As mentioned earlier, MN is a methodological, not a metaphysical form of naturalism, and as such it could be argued that it could not imply reduction. This is because reduction understood as a metaphysical notion exactly says that one aspect of reality is reducible to another (so that, for instance, mental content is reducible to firings of neurons). Now, if MN purports to be without (major) metaphysical bearings, then MN cannot prescribe reduction in this sense, since it would indeed have important metaphysical consequences. The point is then that these two theses in MN are not independent from one another. However, this need not be the case, as reduction can be understood in (at least) two senses. Another way to understand reduction



is to understand it as a reduction from one theory to another. And in this view, reduction on theory-level need not have metaphysical import. Chomsky does not explicitly tell us which kind of reduction he has in mind, but he writes:

Suppose that a seventeenth-century scientist were to have imposed the same demand on celestial mechanics, referring to the prevailing “mechanical philosophy” and rejecting Newton’s mystical theory (as Leibniz and Huygens did), because it was incompatible with “the laws of mechanics.” (Chomsky, 2000, p. 82)

On the basis of this remark, I think a reasonable interpretation is that he understands reduction in this context as a concept applied to different scientific theories, not to aspects of the world in itself.

## 1.5 Methodological Dualism

Let us now turn to the methodological view Chomsky opposes. A more thorough discussion must wait till chapter three; at this juncture a brief presentation will suffice.

Chomsky claims that a certain kind of dualism is widely held in philosophy of language (and mind). He coins it “Methodological dualism” (MD): “... the doctrine that in the quest for theoretical understanding, language and mind are to be studied in some manner other than the ways we investigate natural objects, as a matter of principle.” (Chomsky, 2000, p. 135) The methodological dualist criticizes explanatory theories on “philosophical grounds”, arguing for instance that the theories fail to “deal with the mind” or in other ways fail to accommodate certain non-naturalistic (non-scientific) demands (Chomsky, 2000, p. 77). I understand Chomsky as saying that one is guilty of such dualism if one criticizes theories of language or mind by any other standard than the standards of normal science or if one constructs theories that violate some of the tenets of MN. According to Chomsky, such dualism does not have many explicit proponents, but the idea nevertheless dominates much philosophical practice (Chomsky, 2000, p. 77, 135). This idea, that we - as a matter of principle - should study language and mind differently than other natural phenomena, carries a burden of justification. When all other fruitful scientific inquiries into natural phenomena follow standard scientific methods, why should we employ different methods of investigation when we study the human mind?

One example of such dualism is Michael Dummett's demand for a "philosophical explanation" rather than a "psychological hypothesis" in an account for human knowledge of language.<sup>2</sup> According to Dummett, Chomsky's thesis that speakers of a language have unconscious knowledge of that language is insufficient for a satisfactory explanation of human language capacities: "The important question about a body of knowledge possessed by a subject is, however, the form in which it is delivered, and of this Chomsky tells us little." (Dummett, 1991, p. 97) Crucial to Dummett's theory of meaning is the idea that language is a rational activity and that a theory of meaning for a natural language should be a theory of understanding on the part of the speakers of that language. Furthermore, such understanding essentially involves awareness (access to consciousness). Thus, in Dummett's view, there are important questions about the nature of language and meaning to which Chomsky's theory gives no answer. Chomsky disagrees:

For the sciences, the theories (accuracy aside) tell us everything relevant about the form in which the body of knowledge is delivered; however for the theory of meaning, (and, presumably, language and thought generally, and perhaps vision, reification, etc.), some additional kind of explanation is required, a "philosophical explanation," that goes beyond science. (Chomsky, 2000, p. 94)

To Chomsky, Dummett's demand is an example of an unwarranted dualist demand (Chomsky, 2000, p. 140-141). I will not attempt to give an answer as to who is right on this particular issue. In order to do that we would need to look at the arguments on both sides.<sup>3</sup> What is relevant for our purposes is merely to see that theories of language which demand such "philosophical explanations" that go beyond what science typically can explain are seen by Chomsky as methodologically dualist.

## 1.6 Ethnoscience

Bearing the distinction between MN and MD in mind, let us now turn to another important distinction, namely that between biology/psychology (including neuroscience and the study of language as a natural phenomenon) and "ethnoscience". Chomsky characterizes ethnoscience as a branch of the empirical sciences that studies "commonsense concepts", and what the

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<sup>2</sup> Chomsky's critique is far reaching and Dummett's view is only one example of many. Other prominent figures that are accused of MD are W.V.O. Quine, Donald Davidson, John Searle and Thomas Nagel (Chomsky, 2000).

<sup>3</sup> It is not even entirely clear that these theories are competing, at least from Dummett's perspective, since he has not suggested that there is a problem with the Chomskyan theory apart from the fact that it cannot be the whole story.

origins of human modes of understanding are (Chomsky, 2000, p. 90-91). Ethnoscience aims at shedding light on how people, in various cultures (or in general), seek to understand how the world works, whereas other naturalistic disciplines try to answer how the world really works. (Chomsky, 2003a, p. 268) Thus, ethnoscience is a serious empirical endeavour, but its object of study is restricted to common *beliefs* amongst humans, not facts about the world itself (apart, of course, from facts about people's beliefs). I assume that typical examples of ethnoscience are social anthropology and religious studies. One could also argue that some kinds of experimental philosophy fall under this rubric as well.<sup>4</sup>

Chomsky illustrates this divide as applied to semantics when he presents three different approaches to the study of meaning (although he claims that the divide generalizes to the study of thought, belief, concepts, etc.)

According to Chomsky (2000, p. 173), if we want to know what “meaning” is, we can either:

- 1) Study the internal semantic features of the lexical items' “meaning” in English. This is just part of lexical semantics. We could find out how the word (or lexical item) relates to other expressions of the language. Or:
- 2) Inquire into the commonsense beliefs about meaning. This would amount to ethnoscience. Or:
- 3) Try to discover the best theory of language and its use. (This is rather vague as it stands, but he makes it clear in the following pages that this amounts to the study of the faculty of language, its states and interactions with other parts of the mind/brain.)

Let us first take a detour via 3, before we go on to look more closely at ethnoscience. It is the third option that Chomsky is interested in, and that corresponds to naturalistic enquiry (or “the science of human nature”). The first and second has no (obvious) bearing on the third. (Chomsky, 2000, p. 173) Now, here are some apparent puzzles here. Chomsky states that the first has no bearing on the third. How are we to understand this? Certainly, lexical semantics are not restricted to Chomskyan I-linguistics. There are Chomskyan lexical semantics, formal semantics, and “field linguists” studying the meanings of terms in particular languages. And certainly the non-Chomskyan doing formal semantics are not studying I-languages. But

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<sup>4</sup> Experimental Philosophy (x-phi) is a field in philosophy in which empirical data of ordinary people's intuitions is made use of in the attempt to gain insight into philosophical problems. See for instance Knobe and Nichols (2008).

under which rubric do their projects fall? And are they considered by Chomsky as fruitful, serious science? If so, should they be considered ethnoscience or lexical semantics? The point is that if they are doing “proper science”, and it does not belong to 3, then there seems to be a possibility open for theoretical study of meaning outside the Chomskyan programme. Moreover, 3 seems to me to involve a big leap. There could be numerous different suggestions as to what the “best theory of language and its use” is. And it is hard to see how anyone seriously interested in the nature of meaning would intend to do anything else than seeking “the best theory of language and its use”. One could agree that the quest for theoretical understanding in the domain of language involves discovering the best theory of language and its use, but disagree about what this theory should look like. So one needs to find an answer to which theories are examples of this, and why. Furthermore, we would be interested in seeing whether it is true that 3 has no obvious bearing on the other two. If Chomsky wants to arrive at the conclusion that 3 amounts exclusively to the study of the faculty of language, we need an argument for this. (As far as I can see, he does not argue for it here.) What is more, even if we could establish that theoretical understanding is limited to 3, this is not enough to show that there cannot be different methods of investigation since it is largely unclear what 3 involves.

Let us again turn to ethnoscience. One question that emerges on the basis of Chomsky’s characterization of ethnoscience is whether much of traditional philosophy is a branch of ethnoscience. In the introduction to *The Logical Basis of Metaphysics*, Dummett states the following:

Philosophy can take us no further than enabling us to command a clear view of the concepts by means of which we think about the world, and, by so doing, to attain a firmer grasp of the way we represent the world in our thought. It is for this reason and in this sense that philosophy is about the world. (Dummett, 1991, p. 1)

These remarks, similar in spirit to Strawson’s (1964) “descriptive metaphysics” suggest that philosophy is concerned with describing conceptual schemes. Does this amount to ethnoscience in Chomsky’s terminology? It is obvious that an inquiry into different religions and their beliefs would amount to ethnoscience. It is easy to see this because the ethnoscientist (that is, the anthropologist or researcher in religious studies) is interested in different people’s beliefs about the world, the after-life and so on. They are not after the one true answer to these questions. In the case of philosophy, in the Dummettian sense, matters are less clear. Crucially, ethnoscience is not normative in the sense philosophy is often taken

to be. In any case, the way I understand Chomsky, the distinction between ethnoscience and naturalistic inquiry is a distinction between two subject matters, not two different methods *per se*.

## 1.7 Problems, Mysteries and the Science-Forming Faculty

Another point Chomsky often makes is that there is a difference between problems and mysteries in science. Simply put, problems are those questions to which we can come up with answers, whereas mysteries are those problems that transcend our cognitive powers and therefore evade any answers (from us). Chomsky uses an analogy to rats:

Looking at a rat from our point of view, we can readily understand why it is incapable of solving a maze that requires turning right at every prime number option, or even far simpler mazes; it simply lacks the relevant concepts, in principle. ... A differently constituted intelligence might be able to draw similar conclusions about human science, observing our stumbling failures, and we might even be able to do so ourselves, without contradiction. (Chomsky, 1991, p. 40)

Chomsky also characterizes the difference between problems and mysteries by how they relate to a part of the mind that he calls “the science-forming faculty” (SFF). He coins it SFF to “dignify ignorance with a title”; implying that currently, we do not know very much about it (Chomsky, 1994, p. 155). In any case, problems are believed to fall within the scope of SFF, whereas mysteries are not. SFF is an aspect of the mind that may provide us with ideas about how to solve scientific problems (Chomsky, 2000, p. 82). Successful scientific discoveries then arise in the intersection between SFF and the world. According to Chomsky, this is “a chance product of human nature” (Chomsky, 2000, p. 83).

The idea that there may be questions that the human mind is too limited to answer, or even to grasp, is not a new or controversial one. The interesting part is what falls under the rubric of “mysteries” in this sense. This is important because this might shed light on what prospects Chomsky sees for many questions in philosophy of language and mind.

## 1.8 Concluding Remarks

Methodological naturalism is a methodological doctrine that, when applied to the study of language, involves viewing language as a natural phenomenon, and the aim of these studies is to arrive at deep theories in which deep principles and structures are uncovered on the basis of empirical data, and we hope for these theories to eventually integrate with theories in psychology, biology, neuroscience and, ultimately, physics. We have now stated the nature of the object of study and the aims of the enterprise. Furthermore, we saw that given these constraints, we should basically follow the methods of “normal science”, in which we are initially open to various methods of investigation, and have no commitments to the use of commonsense notions or ideas. I believe this to be the essence of Chomsky’s methodological naturalism. We have seen that Chomsky is critical of several “philosophical accounts” of language, and that he claims that they are problematic because they are based on a methodological dualism.

One question yet to be answered is whether MN holds across the board of the study of language. When methodological naturalism is viewed as a strategy in order to arrive at a specific (deep, explanatory linguistic) theory, it does not seem controversial. My aim will hence not be to discuss whether this is an appropriate methodological doctrine for Chomsky’s own project. I see no reason to doubt that this is indeed a good way to achieve such theoretical understanding. However, Chomsky (and some of his proponents) seem to hold a stronger view, namely that this form of naturalism is the only viable method in the study of language (and mind). Before we say more about this (in chapter three), we will need to look at some key aspects of Chomskyan linguistics, and in particular his view of the nature of language and his view of semantics.

## 2 Language from a Chomskyan Perspective

The human faculty of language seems to be a true “species property”, varying little among humans and without significant analogue elsewhere. Probably the closest analogues are found in insects, at an evolutionary distance of a billion years. There is no serious reason today to challenge the Cartesian view that the ability to use linguistic signs to express freely-formed thoughts marks “the true distinction between man and animal” or machine, whether by “machine” we mean the automata that captured the imagination of the seventeenth and eighteenth century, or those that are providing a stimulus to thought and imagination today. (Chomsky, 2000, p. 3)

Chomsky’s work in linguistics has had a huge influence, not only on linguistics, but also on computer science, cognitive science and philosophy. Many have described the shift in linguistics from structuralism to the generative approach (led by Chomsky) as a revolution, and I think it is fair to say that Chomsky is *the* most prominent theorist in linguistics from the 50’s and up until today. However, linguistics is of course not constituted by Chomskyan linguistics, and even within the generative approach, there are many differing views.

The purpose of this chapter is not to give a comprehensive presentation of Chomskyan linguistics. We will concentrate on the most basic and for our purposes relevant aspects of his overall views of language. The main focus will be on I-language, and the aim is to arrive at a clear idea of what I-language is, the motivation behind it, and a brief presentation of the controversies that arise in its wake.

### 2.1 The Faculty of Language and Universal Grammar

According to Chomsky, “The brain has a component – call it “the language faculty” – that is dedicated to language and its use.” (Chomsky, 2000, p. 77) The language faculty (or “the faculty of language”, or FL) is common to the human species, innate and part of our

biological endowment. We can see it as analogous with other organs or systems of the body, such as the circulatory system or the visual system. Of course, the faculty of language interacts with other systems, for instance the cognitive system and the sensorimotor system.

The initial state of the faculty of language is thought to be genetically determined, and can be thought of as a “language acquisition device” (LAD), taking experience as “input” and returning the language as an “output” (Chomsky, 2000, p. 4). The idea is that initially, FL is similar across the species, but it changes according to experience. Two new-born babies, one born in Norway and the other in Russia, will have the same cognitive basis for learning any (possible) language, but as they get exposed to the native language, one will end up speaking and understanding Norwegian, whereas the other will be speaking and understanding Russian. The languages that humans acquire thus differ, but Chomsky has put forth the bold idea that languages are, in key respects, much more similar to one another than what has been believed, and the differences are limited and only skin-deep. (This is the idea of Universal Grammar, UG) Having a language, then, is the equivalent of the FL being in a certain attained state, or, in other words, having a language is being in a certain mental state.

The idea that humans have FLs suggests that much linguistic competence has an important innate component. The ability to understand and speak a language is not just a matter of learning. The postulation of FL also has another implication for linguistics: The focus shifts from linguistic behaviour to the inner mental structures that are involved in linguistic practice. Both the attained state – the manifestation of a language – and the course of experience provide data that can be used to arrive at an understanding of the initial state of FL (Chomsky, 2000, p. 4). Thus Chomsky writes:

The cognitive perspective regards behavior and its products not as the object of inquiry, but as data that may provide evidence about the inner mechanisms of mind and the ways these mechanisms operate in executing actions and interpreting experience (Chomsky, 2000, p. 5).

This is radically different from earlier behaviourist linguistics.

There are thus three different aspects of FL that can be studied – the initial state of FL, its attained state (that is, its state of being in a state L), and the input FL gets – the experience/exposure component. When a person knows a language, his language “generates” the expressions of his language. (Hence the term generative linguistics.) The expressions of a language L are constructed from lexical items (LIs) (Chomsky, 2000, p. 170). Lexical items have phonological and semantic features (I-sound and I-meaning). Chomsky writes: “let us



assume that the language includes a lexicon which is the set of LIs, and that the lexicon is accessed by the computational procedures that form expressions.” (p. 170) So, lexical items consist of phonological and semantic features; formal features involved in the computational process that form larger structures.

As has already been mentioned, Chomsky advocates the view that the initial state of FL is similar across the human species and that all the differences between languages are less important than their similarities. According to the principles and parameters-approach (which Chomsky introduced in the 1980's), the syntax of natural language is understood in terms of a finite set of principles and a finite set of (binary) parameters. A language is then a set of parameter settings that can be seen as: “answers to questions of a finite questionnaire.” (Chomsky 1991, p. 41)

## 2.2 I-language

We have seen that Chomsky views language as a state of the mind/brain, each system individual to each speaker, but the initial state being similar across the species with only minor variations (compared to the similarities). Having a language is then equivalent with one's FL being in a certain state. According to Chomskyan linguistics, our primary object of study is FL, and that a language is seen as an attained state of FL. Chomsky introduced the term I-language in *Knowledge of Language* and characterized it informally as: “some element of the mind of the person who knows the language, acquired by the learner, and used by the speaker-hearer”. (Chomsky, 1986, p. 22) According to Chomsky, the notion of an I-language is less controversial than other conceptions of language (Chomsky, 2000, p. 78).

The “I” stands for three properties of the language: It is internal, individual and intensional (Chomsky, 2000, p. 169). Let us take some time getting clear about what each of these three “Is” means. To avoid confusion, I will first note that Chomsky's use of the term “intensional” departs from standard usage. By “intensional” here, Chomsky means that L is a “specific procedure that generates infinitely many expressions of L” (Chomsky, 2000, p. 169).<sup>5</sup> Since language is intensional in this view, it becomes relevant how expressions of a language are generated.

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<sup>5</sup> In philosophy, “intensional” is usually derived from “intension”, and denotes the meaning or Sinn of the expression, as contrasted with its reference or Bedeutung.

The language is internally represented in the mind/brain (Chomsky, 2000, p. 4).<sup>6</sup> That is to say, an I-language is a property of the brain, individuated independently of the external factors. The I-language is, as we have seen, a part of the language faculty. Francis Egan points out that the I-language is an inessential part of FL; it is a part of FL only in virtue of the integration of the I-language with the performance systems in FL (Egan, 2003, p. 91).

### 2.2.1 Language as Internal

This is arguably the most controversial aspect of the I-language notion. What does it mean to say that language is internal? Neil Smith writes: “Some exposure to external stimuli is obviously necessary to trigger language acquisition, but the resulting system is one which has no direct connection with the external world.” (Smith, 2004, p. 140)

It is clear from what has been said so far that Chomsky thinks (the scientific interesting notion of) language is a property of the mind/brain. So, it seems, this inevitably leads to a study of idiolects (individual languages) rather than common languages. Furthermore, if language is thought of as a mental property, it seems plausible that language is internal; it is determined by and located in a person’s mind/brain.

Internalism is the apple of discord in many debates between Chomsky and contemporary philosophers of language. Ever since Putnam put forth his “Twin Earth” thought experiment in “The Meaning of ‘Meaning’” (1975), semantic externalism has been widely adopted.

Some have argued that internalism follows from methodological naturalism. Robert Stainton seems to hold that methodological naturalism leads to internalism. If we commit ourselves to methodological naturalism, the object of our inquiry into language should be a real, scientifically tractable object and that that object is the language faculty (Stainton, 2008, p. 929-930). If the FL is our object of study, internalism follows. Chomsky, however, explicitly states that naturalism and internalism are independent notions, and that one could study aspects of nature naturalistically while studying certain phenomena at an external level (Chomsky, 2000, p. 134). Either way, internalism is preferred: “though naturalism does not entail an internalist approach, it does seem to leave no realistic alternative.” (Chomsky quoted

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<sup>6</sup> One might ask what Chomsky means by “representation”. John Collins suggests that “representation” is “a structural notion derived from concatenation algebra, i.e., it marks a condition of being “well-formed” over a primitive “alphabet” closed under a finite set of operations.” (Collins, 2004 , p. 279)

in Egan, 2003, p. 90) I think it is easy to get confused about the notion of internalism, because there are many options as to what it actually means. Let me sketch two forms of internalism:

*Strong internalism:* All interesting features of language, including meaning, are individuated without reference to any external context.

*Weak internalism:* The best way to study language, including meaning, is to study internal mental states.

The weak version differs from the strong one in that it is neutral with regard to how we come to have the mental content that we do. Which does Chomsky have in mind? He writes:

... I do not understand internalism to be a doctrine that denies that “mental states are individuated by reference to features of the subject’s environment or social context,” or holds that “subjects in the same internal (neural) state are in the same mental states” (Egan). Internalism studies internal states, including those involved in what tradition (and common sense) often regard as mental aspects of the world. (Chomsky, 2003a, p. 269)

I therefore take Chomsky to commit only to weak internalism. As we will see, however, this version of internalism has important implications for the study of language. Chomsky’s alternative to referential semantics is semantic internalism, according to which the meaning of a sentence is an internalistic property of the sentence itself, determined by the language faculty. Semantic relations, in this view, are relations between mental representations, they are “in the head”. This idea represents a departure from dominant views in contemporary philosophy of language.

## **2.2.2 Language as Individual**

As already mentioned, since language is located in the mind/brain of an individual, language evidently is individualistic in Chomsky’s view. Furthermore, it seems that individualism follows from internalism, as long as we agree that internal mental states are properties of an individual, not shared. The reverse does not hold; you could be an externalist and still believe that language is individual (Donald Davidson (1986) is a proponent of this view).

This involves a rejection of the idea of “shared, public languages”, and that linguistically competent speakers have partial knowledge of this language. It seems that there are at least two arguments for individual languages. The first is methodological in character and says that idiolects (a language spoken by a person *p* at a time *t*) are simply more scientifically tractable

objects of study than shared languages, at least for Chomsky's purposes. (Field linguists could disagree, but their aims are different from Chomsky's.) The second argument points out that common languages (such as English, Urdu and French) are not individuated by any linguistically interesting means; there are dialects with varying degrees of overlap, and the divide between Norwegian and Swedish, for instance, exist for political and historical reasons. Dialects fare no better, as they are as hard to individuate. Eventually, only individual languages remain (and they too differ with time, hence the non-temporal definition of idiolects). It is worth emphasizing that this argument does not in itself establish I-languages as the only viable object of study. As mentioned, Chomsky is not the only one who has questioned the plausibility of shared languages. In "A Nice Derangement of Epitaphs" and "The Social Aspect of Language", Davidson argues that language does not necessarily involve shared norms, but this is not to say that he thereby is committed to restricting his study of language to the study of I-languages.

Chomsky argues that Dummett's idea of language as essentially social is based on false or dubious empirical claims (Chomsky, 1980, p. 117). Dummett argues for this notion of language in "Meaning, Knowledge, and Understanding", claiming that the idiolect (a language spoken by an individual at a particular time) cannot be anterior to the common language, since the idiolect is dependent on established word meanings in the common language. I read him as claiming that language use has rules, in contrast to activities such as taking a bath; one can take a bath in any manner one wants and one would still be performing the action of taking a bath, whereas one would not be speaking English if one did not follow the rules of the English language (Dummett, 1991, p. 84-85). (One could question the relevant difference between those actions, though, because it seems that bathing also has rules. If you mispronounce a word, you are still engaged in linguistic behaviour, but you fail to obey the normative standard of the language in question. It seems that the same is the case if you bathe in Coca Cola while dressed in a tuxedo. You would still perform the action of taking a bath, but it would fail to meet the standards as to how one should successfully perform the action.)

Chomsky points out that Dummett's conclusion does not follow from the observation that speakers turn to the linguistic community for answers to questions about meanings of words. According to Chomsky:

From this observation we may conclude merely that each person has an internalized grammar that leaves certain questions open, and is willing to turn to others to answer the open questions. But it does

not follow that there exists a “shared language”, a kind of “superlanguage”, in terms of which each individual’s understanding of his own language must be explained. (Chomsky, 1980, p. 118)

It seems that Chomsky thinks that if a speaker of English does not know the meaning of a particular word he can ask someone with whom he shares “a similar system”, without this being evidence that the two systems are identical, let alone that all speakers of English share the same system (or, in Dummett’s terms, share the same language) (Chomsky, 1980, p. 118).

Furthermore, Chomsky believes that it is dubious whether Dummett’s notion of a common language is coherent. This doubt is raised on the background of evidence that different dialects of the same “common language” can differ more from each other than different “common languages”. There seems to be no clear-cut way to draw the distinction between different languages (Chomsky, 1980, p. 118). Thus, if Dummett wants to give a coherent account of our knowledge of language, he must base this on an adequate notion of the nature of language, and Chomsky suggests that Dummett’s theory is challenged (by factual evidence) to explain how language could be essentially common.

### **2.2.3 Language as Intensional**

As mentioned, language is intensional in the sense that a language *L* is a specific procedure, generating infinitely many expressions of that language. What does this mean? In this context, intensional is contrasted with extensional. To see the difference, compare a human being to a computer doing a simple math puzzle (adding 3 to 5 and then subtracting 2, for instance). When calculating, the procedures are extensionally equivalent (that is, the human being and the computer will arrive at the same result, 6), but the procedures are intensionally different. Human beings do not think in the same way as computers. Linguists are interested in humans, so it is a task for the linguist not only to describe the output, but to find out what procedures humans use, how their minds work. In Chomsky’s view, then, language is a generative procedure, not merely the output of one (Collins, 2008, p. 140).

### **2.2.4 Computationalism**

In order to fully grasp Chomsky’s position it is vital to know that his views are based on a computationalist view of the mind. According to this view, cognition is a matter of carrying out computations over representations (Smith, 2004, p. 141). Just as important, however, is to

be aware that Chomsky's usage of the notions "representation" and "cognition" is technical and sometimes departs from ordinary, common sense usage. (As mentioned, this is not a problem in Chomsky's view, since the scientist has no obligation to adhere to common sense conceptions.) A representation need not, in this view, be a relational notion. It is rather a "postulated mental entity" (Smith, 2004, p. 142).

### 2.2.5 E-language Conceptions

Chomsky (2000, p. 78) argues that the notion of an I-language is less controversial than other conceptions of language. An E-language conception does not amount to a particular theory of language; all conceptions of language that see language as external and extensional (where the latter amounts to the view that language is a set of objects) are given this diagnosis. According to the E-language conception, it is typically held that language is external and/or common. One example of an E-language view is to think of language as a set of utterances. Moreover, an E-language view does not preclude a belief in the primacy of idiolects; one could for example endorse individualism whilst denying that language is internal.

The Norwegian Language Council is an example of an institution which formulates normative guidance as to the correct grammar and vocabulary for a particular language. There is, of course, nothing wrong with this *per se*, but this is an E-phenomenon which has nothing to do with the kind of language Chomsky and many other linguists are interested in. It is based on political, historical and social norms (Chomsky, 1988, p. 676).

## 2.3 Internalist Semantics

What does semantics look like within the Chomskyan internalist framework? In light of the exposition so far, it is natural to conclude that semantic theory within this framework will ask different questions and have different conditions of adequacy compared to traditional philosophical theories of meaning. Chomsky has suggested that semantics falls within syntax:

... I suspect that much of the very fruitful inquiry and debate over what is called "the semantics of natural language" will come to be understood as really about the properties of a certain level of syntactic representation – call it LF [logical form] – which has properties developed in model-theoretic semantics, or the theory of LF-movement, or something else, but which belongs to syntax broadly understood – that is, to the study of mental representations and computations – and however suggestive

it may be, still leaves untouched the relations of language to some external reality or to other systems of the mind.” (Chomsky, 1995, p. 38)

Syntax “broadly understood” is thus not restricted to the study of rules and principles for the construction of sentences and phrases, but involves the study of other mental representations. It is worth repeating that “representation” is not taken to be an intentional notion suggesting any external “thing” that is being represented; once again, we depart from common sense usage of terms. Internalist semantics, then, does not purport to explain the connection between language and the world or language in communication, so such notions as truth, reference, and communicative intentions clearly fall outside its scope.<sup>7</sup> What can we say about meaning on the basis of this?

According to Chomsky, an expression E of a language L amounts to a pair <PHON, SEM>, where each consists of relevant information about the sound and meaning, respectively, of E. Thus PHON(E) is information about the sound of the expression, whereas SEM(E) is information about its meaning (Chomsky, 2000, p. 173). These interfaces provide instructions to performance systems (the vocal musculature, the auditory system and so on on the sound side, and the faculties of the mind/brain involved in thought and action on the semantic side). The semantic interface is a symbolic system that consists of “semantic values”. These values are not external entities, but purely syntactic objects. A competent speaker of English knows, for instance, that ‘Michael chased the robber’ entails ‘Michael followed the robber’ but not ‘Michael preceded the robber’. The study of an expression’s semantic features (its *logical form* or LF) can explain how we interpret linguistic expressions as involving rhyme or entailment (Chomsky, 1994, p. 159, Chomsky, 2000, p. 124-125). The idea is that part of the faculty of language provides instructions for interpretation to the performance systems. Furthermore, intrinsic properties of expressions “focus attention on selected aspects of the world as it is taken to be by other cognitive systems, and provide intricate and highly specialized perspectives from which to view them, crucially involving human interests and concerns even in the simplest cases.” (Chomsky, 2000, p. 125) Instructions as to how we understand the meanings of expressions are a property of the lexicon, and as such they are completely internalistic.

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<sup>7</sup> There are some internalist semantic theories that operate with a relation R holding between the expression and “semantic values” in a stipulated domain, but this clearly does not amount to a relation of reference in the traditional, externalist sense (Chomsky, 2000, p. 38-39).

These ideas of semantics are far from a fully-fledged theory of meaning for natural language. Chomsky admits that we currently know much less about the semantic part than about the sound part of expressions. This is because we have less understanding here of the relevant systems; we know more about systems involved in the production and interpretation of sounds than we know about the systems (for instance the conceptual-intentional system, which is basically unexplained) associated with meaning. According to Chomsky, it may even be the case that these issues fall outside the realm of naturalistic inquiry.

### **2.3.1 Meaning as Instructions for Forming Concepts?**

Paul Pietroski, while in agreement with Chomsky over MN and internalism, seems more optimistic on behalf of a theory of meaning for natural language.<sup>8</sup> His claim is that meaning should be viewed as mental concept-forming instructions. A concept is a composable mental representation. In this view, then, a lexical item (a word) is an instruction to fetch an appropriate concept, whereas a phrase is an instruction to combine concepts. The basic idea is that a person's I-language generates these instructions, and that they in turn interface with other systems of the mind/brain (Pietroski, 2008, p. 318-319). This approach to semantics is compatible with some versions of truth conditional semantics.<sup>9</sup>

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<sup>8</sup> Pietroski's "Minimalist Meaning, Internalist Interpretation" is revisionary in character, and suggests a new (internalistic) way of understanding current semantic theories rather than rejecting them altogether.

<sup>9</sup> We will turn to a presentation of truth conditional semantics in chapter four, but the idea is that the expressions of an I-language are seen as instructions to construct concepts with (Tarskian) satisfaction conditions.



### 3 Does Methodological Naturalism Hold Across the Board?

So far we have looked at methodological naturalism as well as Chomsky's approach to linguistics. These are topics interesting in their own right, but what should be striking to the philosopher at this point is the fact that this approach to language seems to be at odds with a vast array of philosophical projects. Should we accept MN and give up on all projects in philosophy of language which do not cohere with the Chomskyan picture? As mentioned, one of the main topics in this thesis is specific Chomskyan arguments against referential semantics. Before we turn to them, I will for the purpose of surveying the landscape sketch some more general moves that could be made. Whether or not they will succeed will be left open here; but I think the following considerations show that there are argumentative options open for proponents of theories that fall outside of Chomsky's framework.

First of all, we must distinguish between two different theses. The weakest one is that naturalistic theories aren't answerable to dualist considerations such as *a priori* beliefs about what the theories should explain or what notions they should use. This clearly is a position held by Chomsky. He claims, as we have seen, that MD criticizes naturalistic theories on "philosophical grounds" (i.e. that they impose *a priori* demands), and he stresses that MD "should not be allowed to hamper efforts to gain understanding into what kind of creatures we are" (Chomsky, 2000, p. 163).<sup>10</sup> We can, I think, grant Chomsky that MD is unacceptable when understood as an attempt to impose restrictions on scientific theories. This should be uncontroversial if we accept that the naturalistic study of language and mind is like physics and chemistry in that it invents technical notions, departs from common sense usage of terms and is free from *a priori* stipulations of what the theories in question should explain. I think this is a reasonable position, and agree with Chomsky that such projects must be allowed to follow their own course, explaining what they can explain whilst not being criticized for failing to explain something else.

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<sup>10</sup> This formulation is, one must admit, quite polemical. I think however it is clear enough that we should understand "efforts to gain understanding into what kind of creatures we are" as meaning naturalistic theories.

The stronger, and far more contentious, claim is that in so far as one seeks theoretical knowledge of language and mind, one is committed to following the tenets of MN or come up with a justification for departing from it. Chomsky writes:

Plainly, a naturalistic approach does not exclude other ways of trying to comprehend the world. Someone committed to it can consistently believe (I do) that we learn much more of human interest about how people think and feel and act by reading novels or studying history or the activities of normal life than from all of naturalistic psychology, and perhaps always will ... We are speaking here of theoretical understanding, a particular mode of comprehension. In this domain, any departure from this approach carries a burden of justification. Perhaps one can be given, but I know of none. (Chomsky, 2000, p. 77)

I interpret Chomsky here as supporting this stronger view, namely because I take the philosophical theories (e.g. various theories of meaning) to fall within (or at least aspire to fall within) the rubric of “theoretical understanding”.

Let us consider a philosopher, call him Mr. X, who studies, for example, referential non-internalist semantics as well as the relation between rationality and conscious knowledge of language on the part of speakers. What can he say to the allegation that he is a methodological dualist who should either justify this methodology or give up on the project? A natural reply would be to claim that there is no need for this dramatic conclusion: The Chomskyan project and his own are simply different enterprises. There is room for both. The Chomskyan could reply that they are studying the same, namely a natural phenomenon. Why insist on having different theories of what is, ultimately, the same phenomenon? Moreover, the Chomskyan approach to language has proven to be very successful and has opened up for a lot of fruitful research programmes.

First of all, I think this rests on a premise that science is, in a sense, the starting point or the *prima facie* foundation of theoretical understanding. But this might be contested. In some views, philosophy, in particular conceptual analysis, plays as important a role in theoretical understanding, for example in fundamental physics. As Dummett points out: “To propose an interpretation of quantum mechanics is to give an account of the constitution of reality that accords with that theory. This is notoriously difficult to do, and it is plainly a philosophical problem.” (Dummett, 2010, p. 29) Something similar may hold for the study of language as well.

Mr. X could agree to the fact that at some level they are both studying the mind/brain, a part of nature, but that he and Chomsky are interested in different aspects of this phenomenon. Clearly, there are questions about language (for instance questions about the communicative aspect of language and the relation between language and the mind-external world) that Chomsky has not come up with any answers to via his method. And this precisely is the justification for the pursuit of these questions using a different approach. These theories need not reach the status of the “hard sciences”, but this does not preclude the possibility of the theories providing interesting insights. And of course, it does not follow from the fact that the Chomskyan project has proven fruitful, that other enterprises should be put to sleep. To Dummett (1978), for instance, conscious acts (and rationality, rules, purpose and so on) are at the core of his conception of language. To arrive at a theory of meaning which deliberately avoids using the notions of rationality and consciousness would miss the entire point of making such a theory in the first place.

Davies and Stone (2002) suggest that even if MN can threaten some philosophical positions, there are other options open to the philosopher. Firstly, conceptual analysis has its purpose within naturalistic theories: To ensure conceptual coherence. But this seems to leave very little substantial work left to the philosopher of language. Secondly, they suggest (similar to Dummett) that there is a distinction between scientific and philosophical projects, and thus that MN is not the only alternative. A philosophical project is, contrary to a scientific project, one that tries to arrive at a general account of our conceptual dealings with the world (Davies and Stone, 2002, p. 12). Such projects may have a “value of their own” even when conflicting with MN.

If the Chomskyan objects that this option is not on the menu because such questions fall within mysteries (i.e. they are not theoretically tractable), Mr. X can point out that this conclusion is premature. The proof of the pudding is in the eating, so Mr. X’s theory should be judged based on its merits. Of course, it is an open question at this point whether Mr. X’s theory is successful, and the Chomskyan could have other arguments targeting the theory, but the methodological considerations made so far seems insufficient as an attempt to rule out Mr. X’s theory. One way in which this kind of debate could proceed then, is by taking a closer look at such philosophical theories and assess whether they succeed in explaining the phenomena they purport to explain. If they do, then Chomsky’s claim that the phenomena in question are ‘mysteries’ is rendered false.

The above is a crude sketch of a possible way of beginning to respond to the methodologically motivated objections to projects in philosophy of language. What I will be doing henceforth, however, is looking at some specific Chomskyan arguments targeting the idea of word-world relations and considering their ramifications.

# 4 Ontological Arguments Against Word-World Relations

Names are signs not of things but of our cogitations. (Hobbes, 1889, p. 16f.)

In this chapter, we will first take a look at the traditional view of semantics going back to Frege and Russell, before we go on to look at the Chomskyan criticism of referential semantics. Here, I will take as my point of departure three arguments against word-world relations in semantics as presented in Chomsky's *New Horizons in the Study of Language and Mind*. What ties these arguments together is that they all seem to be motivated in part by ontological considerations. Hence, they do not merely target theories from the perspective of methodological naturalism. I will argue that these arguments do not succeed in refuting philosophical theories of meaning which upholds word-world relations. In chapter five, we will look more closely at the connection between semantics and ontology before we turn to methodological arguments in chapter six.

## 4.1 Referential Semantics

We use language to think, communicate with other persons, and talk about the world we live in. This makes language a very special human ability. A natural answer to the question of what makes this possible is, in part, that linguistic expressions have meaning. Philosophers have long sought to give an account of what a theory of meaning for a natural language should look like. It is sometimes assumed that once we have arrived at an answer to what such a theory of meaning should look like, we have also (at the same time) answered the question of what competent speakers of a natural language know. In other words, a theory of meaning is a theory of understanding (see for instance Dummett, 1974, p. 3-4). It is however not necessary for linguistic competence that a speaker knows such a theory of meaning, but the theory of meaning is a systematic, theoretical description of the competence such that if one had knowledge of such a theory, one would then be guaranteed to know the language. That is, knowledge of such a theory is sufficient but not necessary for linguistic competence.

Starting with Gottlob Frege's *Begriffsschrift* (1879), formalism or "ideal language philosophy" has been a popular position in philosophy of language. In the attempt to give arithmetic a secure foundation, Frege developed a logic for formal languages. This inspired later theorists to make use of a similar system for the purpose of understanding natural languages. Bertrand Russell, though critical of some aspects of Frege's system, continued to work within this framework. The idea that features of natural ("everyday") language can be expressed and explained in formal language is clearly seen in "On Denoting" (1905), where he argues that definite descriptions can be eliminated for the benefit of expressions containing quantifiers. He tried to show that definite descriptions (and, later, proper names<sup>11</sup>) are not denoting phrases, contrary to how it seems prior to deeper investigation. The logical (real) structure of a natural language expression, then, can differ from its surface structure, or our common sense ideas about the expression. Natural language is thus thought of as similar to formal languages in key respects, and Russell suggests that "any attempt to be precise and accurate requires modification of common speech" (Russell, 1957, p. 263). Frege and Russell did not think that natural languages could reach the same status as formal languages. The reason for this was that natural language was believed to be too filled with inaccuracy and vagueness. One motivation behind this approach to language is that a formal language is more precise and unambiguous and hence less likely to yield confusion, a huge advantage in scientific and philosophical theories.

Semantics, in this view, would involve assigning semantic values to the different semantic categories: expressions and their component words. Furthermore, this approach is compositional in character; it sees the meaning of a sentence as determined by the meaning of its parts and rules for combination. The common practice is to assign entities to singular terms (singular terms refer to things), a set of things to predicates (the predicate 'is white' has the set of all white things as its extension) (Martinich, 2010, p. 13-14). In the traditional view, then, a name like 'Stockholm' refers to Stockholm and the predicate 'is a capital' has all capitals as its extension. Furthermore, Davidson (influenced by Tarski's (1944) theory of truth) suggested that a theory of meaning for a natural language can be established by an assignment of truth conditions to the expressions of the object language: "To know the semantic concept of truth for a language is to know what it is for a sentence – any sentence – to be true, and this amounts, in one good sense we can give to the phrase, to understanding the language." (Davidson, 1967, p. 310) According to this view, when we specify the truth

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<sup>11</sup> See Russell, 1918, p. 62.

condition for a sentence we also specify the meaning of the sentence, since knowing the conditions under which a sentence is true is to know what the sentence means. In our example, ‘Stockholm is a capital’ is true if and only if Stockholm is a capital.<sup>12</sup> The sentence is thus seen as expressing a proposition – a thought. The truth value of this sentence is determined both by states of affairs and the meaning of the words. The idea is that we have now established a relation between the sentence and the world; we have managed to say something about what must be the case for this sentence to be true.

This is, of course, a very crude overview in which the details and complexities of these positions are left out. What is important for our concern is merely to note that once the leap from formal language-semantics (where the syntax is defined and the references of the terms stipulated, making for a very precise unambiguous semantics) to an analogous semantic theory for natural languages is taken; language becomes linked to aspects of the world. This, I think, is a *prima facie* plausible position. It mirrors how we usually think about words and sentences; names or other singular terms get their meaning, at least in part, by picking out entities in the world. I refer to John by using the word ‘John’, and predicates are about a group of things. Lastly, it seems obvious that assertoric sentences can be true or false. In the standard view, then (which I take to be Chomsky’s main target), language bears a relation to the world through reference. Moreover, semantic externalism is a popular position in philosophy of language, and in this view the relation between linguistic items and the world is crucial in order to determine the meanings of expressions.

Traditionally, this formalist approach has been contrasted with another influential tradition in the philosophy of language, stemming from J.L. Austin, P.F. Strawson, the later Wittgenstein, Gilbert Ryle and H.P. Grice. This view, often called “ordinary language philosophy”, made pragmatics a center of attention, and it criticized the formalists for having a too limited view of language seeing as they largely ignored language in use. Austin’s (1961) work on performatives, for instance, highlights that there are sentences that grammatically behave like statements yet do not have truth values. Instead, they have “felicity conditions”, the satisfactions of which depend crucially on context. Grice (1957) sought to give a theory of meaning which explained linguistic meaning through the notion of communicative intentions, asking in virtue of what expressions of a language get their meaning. The notion of speaker meaning is crucial: For a speaker to mean something by a sentence S is for him to express S

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<sup>12</sup> The truth condition is given in a meta language, so we could equally well say that ‘Stockholm is eine Hauptstadt’ is true iff Stockholm is a capital.

with a certain communicative intention (i.e. an intention of invoking a certain belief in the hearer by their recognizing this intention) (Grice, 1957, p. 111).

Clearly, the Chomskyan approach to language fits into neither of these traditions. As we will see, Chomsky rejects the idea that words refer to objects, and that meaning must be accounted for on the basis of this relation. Chomsky's arguments in NH are seen as targeting "contemporary philosophy of language", which "follows a different course", asking what a word (e.g. 'water' or 'book') refers to. But, Chomsky contends, "the question has no clear meaning" (Chomsky, 2000, p. 16). Moreover, the use of language is in Chomsky's view not something one can study naturalistically. Chomsky (and many of his proponents) argue that once we reflect on a few typical cases, the straightforward idea that words get their meaning from denoting things in the world loses much plausibility.

Remember that we are concerned with meaning and reference in natural language; not formal (invented) languages. For Chomsky, there is no reason to suppose that natural languages are, in any relevant aspects, similar to formal languages. His main reason for holding this is, I think, that natural languages are properties of human brains, innate, born with, and not "created" with the same aims as formal languages (clarity, etc.), if they have developed with any sort of aim or purpose at all (which is far from likely, according to Chomsky). Moreover, he claims that "it is not assumed that language is used to represent the world" (Chomsky, 2000, p. 132)

## **4.2 Formalist Theories of Meaning Without Reference**

I promised that I will discuss Chomskyan arguments against referential semantics. One could then ask what theories are targeted. In this thesis I will focus on arguments which target the notion of reference as well as the idea of word-world relations more generally. A lot of the remarks by Chomsky seem to be primarily concerned with reference in particular. Insofar as the arguments are directed at reference they do not seem to threaten all influential semantic theories which advocate word-world relations. To see this, we can distinguish between two different approaches to referential or truth conditional semantics. In some views the basic semantic relation is the relation between a subsentential component (a word or phrase) and its



semantic value (e.g. its referent). Other theories, by contrast, take the fundamental semantic relation to be the relation between a sentence and its truth condition.

An example of the latter idea is Davidson's theory.<sup>13</sup> In "Reality Without Reference" he argues that reference is inessential in explaining the relation between language and the world:

We don't need the concept of reference; neither do we need reference itself, whatever that may be. For if there is one way of assigning entities to expressions (a way of characterizing "satisfaction") that yields acceptable results with respect to the truth conditions of sentences, there will be endless other ways that do as well. There is no reason, then, to call any one of these semantical relations "reference" or "satisfaction." (Davidson, 1977, p. 256)

In short, this is believed to be possible because in Davidson's view, it is the relation between sentences and their truth conditions that explains the relationship between language and the world. If we arrive at an explanation of this, we have achieved the important goal. The relation of reference merely plays a role within the theory (in showing how the parts determine truth conditions); it does not in and of itself explain word-world relations. Irrespective of whether or not this is a plausible view, it shows that there are theories within the formalist tradition which do not seem to be harmed by arguments directed at reference.

However, Davidson still holds a view in which there are word-world relations of some sort:

The theory gives up reference, then, as part of the cost of going empirical. It can't, however, be said to have given up ontology. For the theory relates each singular term to some object or other, and it tells what entities satisfy each predicate. Doing without reference is not at all to embrace a policy of doing without semantics or ontology. (Davidson, 1977, p. 256)

It may thus be that some of the Chomskyan considerations to follow have implications for this broader idea of there being any relation between language and the world.

## 4.3 Ontological Arguments

So far we have seen that Chomsky favours internalist semantics. In NH, Chomsky objects to theories employing the notion of reference, and it seems as if they are meant to be arguments reaching over and above purely methodological considerations. Therefore, I will look at these objections and see whether they motivate the rejection of referential semantics independently of methodological naturalism. I present and discuss three different Chomskyan arguments that

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<sup>13</sup> There are other theories which follow a similar course. See for instance Lewis (1975) and Dummett (1976).

reject referential semantics on the basis of ontological considerations. The first argument denies the existence of public words, the second points to problems with external objects (the supposed referents) and the last one claims that referential semantics yields unacceptable ontological commitments. My main interest is Chomsky's own views, but in cases where Chomsky's own arguments are opaque or incomplete, I will draw on other important theorists in the relevant field. Hence, I use the term "Chomskyan" in order to stress that some ideas may depart from Chomsky's own.

### 4.3.1 The Argument from the Nonexistence of Words

This argument<sup>14</sup> aims to show that public linguistic words do not actually exist, and that we must therefore reject the relation of reference altogether (Stainton, 2008, p. 917-918).<sup>15</sup> The argument points to the problem with individuating languages and words, and concludes on that basis that public words do not exist. If this step succeeds, it follows that there cannot be a relation between public words and external entities. This argument thus relates the rejection of word-world relations to the rejection of certain kinds of E-conceptions of language (we remember that a public language is an E-phenomenon).

According to the Chomskyan<sup>16</sup>, the divide between the notions of various commonsense languages is not an ontologically real divide. In common sense, we speak of Norwegian as being a different language from Swedish, but this has to do with non-linguistic, arbitrary factors, such as national borders, history and so on<sup>17</sup>: "... the way we divide up languages in common sense, and in much philosophical theorizing, does not actually correspond to any robust divide." (Stainton, 2008, p. 918) If we study these languages and their linguistic features, we find that they are more similar to each other than the dialects of some other language, for instance Chinese, which is considered a single language. Furthermore, the Norwegian people living close to the Swedish border typically have a dialect that lies somewhere between Norwegian and Swedish. What we call Swedish and Norwegian thus varies synchronically over geographical (and political) space. What is more, languages change

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<sup>14</sup> Stainton calls this argument "The Radical Argument from Ontology", but due to the fact that this thesis deals with several ontological arguments, I use "The Argument from the Nonexistence of Words" for the purpose of clarity.

<sup>15</sup> Stainton also includes sentences, thus rejecting truth as well as reference. Here, I will focus on words and reference.

<sup>16</sup> This presentation is based on Stainton's formulation of the argument, and hence the views expressed may differ from Chomsky's.

<sup>17</sup> See also Chomsky, 2000, p. 99-100 for similar remarks.

diachronically (over time) as well. The very idea that there exist public languages with “fixed rules” out there in the world seems in light of this highly implausible. Hence public languages and words do not exist.

A consequence of this seems to be that it is impossible to decide what individuates a particular word in a language. In order to say that the word ‘tomato’ and the word ‘tomata’ are just different versions of the same word, whereas the Norwegian ‘tomat’ is a different word, we need the notion of public languages. What else can tell them apart? We cannot turn to a difference in spelling or pronunciation because they are different in the first two cases as well. The only thing that keeps them together, so to speak, is that they are supposed to be a word belonging to English, whereas ‘tomat’ is a Norwegian word. Similarly, does the word pronounced ‘fotoGRAFer’ in India and the word ‘foTAHgrafer’ in Canada really constitute two different words (with shared meaning) or mere variations of a single word?<sup>18</sup> Another ground for doubting the objectivity of the individuation of public words is that there are disagreements over whether a (so-called) word which has multiple meanings and inflections really counts as one word or many. Take ‘show’ and ‘shows’, for example; either version can be a verb or a noun, and how many words we end up with is a matter of decision. The point is the same here as with the above mentioned cases: The individuation of public words seems arbitrary and not grounded in objective or linguistically relevant facts (Stainton, 2008, p. 919). Furthermore, grammars of public languages have a normative aspect to them (clearly manifested in language councils), and this adds more pressure to the idea that these “public words” are based on society norms rather than objective facts (Stainton, 2008, p. 920). The notion of public languages (and words) thus makes no sense when we set out to study language empirically: “This idea [of common public language] is completely foreign to the empirical study of language.” (Chomsky quoted in Stainton, 2008, p. 918)<sup>19</sup> When we study language as a natural phenomenon, we find no public languages, but only individual idiolects, sets of idiolects with varying degrees of overlap, and the faculty of language which is universal (Stainton, 2008, p. 918). Stainton summarizes the argument from ontology in this way:

Because there is no objective way to individuate/count words (across or within a “dialect”), and because what makes something a shared, public word, if there really were any, would need to appeal to “ought”

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<sup>18</sup> This last example is from Stainton (2008, p. 918-919).

<sup>19</sup> We will return to a discussion of this claim, but let me at this juncture point out that the way I understand Chomsky here, he is not committing to the idea that public languages do not exist *per se*, but rather that the notion of such languages is inadequate and useless in naturalistic inquiry.

rather than “is”, the Chomskian concludes that there aren’t really any “public words.” But then there cannot be a comprehensive science of language that pairs words (and sentences) with external things. (Stainton, 2008, p. 920)

If the radical argument succeeds, Stainton maintains, we must conclude both that there cannot be a science of word-world relations and the stronger thesis that there cannot be any truths whatsoever that state a relationship between entities in the world and public words (Stainton, 2008, p. 922-923).

Does this argument represent a threat to referential semantics? I will consider a few responses. Stainton mentions a possible objection. According to the critics, the argument gives rise to a paradox. It is obviously absurd, they claim, that public words cannot exist: “how can something which doesn’t exist have different pronunciations ...?” (Stainton 2008, p. 920-921) In other words, the opponents suggest that the existence of words is presupposed in the argument against the existence of public words. As grave as this may seem at first, there is according to Stainton a possible way to deal with this criticism whilst holding on to the radical argument. It involves providing an error theory: Granted, it *seems* absurd to deny that public words exist, but that is because we project them out in the world, when really they are (at least partially) inside our minds. Hence public words do not exist objectively, in the external world, but we are tempted to think that they are. Public words are mental constructs, not external entities. This may conflict with commonsense opinions, but that is not a problem for the methodological naturalist (Stainton, 2008, p. 922). What should we say about this? Firstly, the thesis that public words are mental constructs is not argued for here, it is merely stated. Thus, one is free to remain unconvinced of that explanation. The important thing, however, is that it is not necessary to establish this thesis in order to refute the objection. In my view, it suffices to note that talking about “public words” does not entail that they exist. I can talk about the properties of Laputa,<sup>20</sup> or the consequences of world peace for society without this being ground for the existence of either. I can even argue from the qualities of Laputa that it does not exist.<sup>21</sup> There are, however, more serious problems with the Argument from the Nonexistence of Words which Stainton does not address. Let us turn to them in order.

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<sup>20</sup> Laputa is a fictional flying island depicted in Jonathan Swift’s *Gulliver’s Travels* (1726/2003).

<sup>21</sup> It is worth mentioning in this connection that if we accept a referential semantic theory according to which words get their meaning in virtue of referring to things in the world, we may face “the problem of nonexistence” (how we can manage to say meaningful things in cases where our words do not refer).

First of all, it can be questioned whether the conclusion that public languages do not exist follows from the premises. We can agree with Stainton and Chomsky that languages change over time and are individuated with reference to political, historical and geographical facts rather than by linguistic facts. These are perfectly valid points, familiar (I should think) to anyone who studies language. But does it follow that public languages do not exist? One could claim that it is consistent with the premises to hold that there is only one public language which changes over time.

Another problem is that the conclusion that public words do not exist does not seem to follow (on an ordinary understanding of existence) from the problems with individuating words. As Collins points out, the fact that public words are constitutively dependent on human perspectives and mental states does not entail that they do not exist (Collins, 2009, p. 59). Most of us believe that mountains, neighborhoods and persons exist, even though we know that these things are sometimes hard to individuate (or, rather, that their individuation is a matter of decision rather than mind-independent fact), and that they are dependent on human interests and categorization. As Stainton writes, one could worry that “the standard for being a “real object” has been set too high in the discussion above.” (Stainton, 2008, p. 921)<sup>22</sup> In any case, this hinges on what kind of ontology one is willing to accept, as well as what standards one thinks things must meet in order to deserve existence. Note also that if we admit that the problems with individuation lead to the rejection of the existence of public words, we are faced with another question: Given that we want to keep words of idiolects (or I-languages), are their individuation easier or less mind-dependent? The problems with word-individuation do not only arise out of differences between speakers or communities. Take the word ‘bank’ for instance. Let us assume that this is a word in my idiolect (rather than an English word). Sometimes I use ‘bank’ to refer to a financial institution; at other times I refer to a river bank. Is it one or two words? What about its plural form (‘banks’), is that a third word? It seems as if we must reject the existence of words in idiolects as well, clearly not a welcome conclusion for the Chomskyan. In any case, rejecting the existence of public words on the basis of problems with individuation seems to commit one to rejecting a host of other objects, leading one into a far from mainstream ontological view. It cannot be settled here whether or not this is a bad thing, and whether or not the problems of individuation are severe enough to justify this move.

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<sup>22</sup> See Jackendoff (1987) for an opposing view.

A third objection I would like to raise is that it is far from clear that this argument, even if it could be tweaked to accommodate the objections so far mentioned, has consequences for all kinds of semantic theories which traffic in word-world relations. Based on my reading of Stainton's argument it is ambiguous with respect to what the target is. Is it restricted to public languages, or does it purport to damage all kinds of referential semantics? It seems consistent with what has been said so far to suggest that the denotation relation holds between words (or lexical items) of an idiolect (or an I-language) and external things. One could thus argue that this is not an argument against reference; it only targets reference between public words and external objects *tout court*. Stainton mentions this possibility: "Granted, for all that's been said so far, there might be other things that can be paired with external objects: morphemes of an individual's mental lexicon, for instance. But this possibility offers little solace to the kind of theorist that Chomskyans are targeting." (Stainton, 2008, p. 920) If the target is word-world relations (which I understand it to be), it bears emphasis that proponents of referential semantics differ on what they are doing referential semantics for. For Dummett (1986), for example, the notion of a public language is priority, but there are alternatives. Consider Davidson's idea that it is idiolects that should be studied (Davidson, 1986, 1994). For Davidson, the central notion is an idiolect spoken by a person at a particular time. The argument from the nonexistence of words concludes, rather boldly, that "there cannot be a comprehensive science of language which pairs words with external things". Stainton, however, accepts that there are idiolects, so this looks like a *non sequitur*, seeing as it is consistent with the premises to have a theory in which words of an idiolect is paired with externalia. I think Stainton is right that the theorists Chomskyans oppose have traditionally been concerned with E-languages, but there are many versions of this, and we should not confuse individualism with internalism. One could have a view of language according to which words are individual (as opposed to public), yet external for instance. So unless one restricts the alternatives to include only internalist idiolects, the conclusion does not follow and it seems that everything that has been said so far is consistent with non-internalist idiolects. It will not do to presuppose that by idiolects we should think of internalist versions, for this is clearly question begging; it would only convince someone who is already an internalist.

Before turning to the next argument against word-world relations, a few words on Chomsky's own views is in order. As we have seen, Chomsky claims that the notion of a public language is "completely foreign to the empirical study of language". This is a different conclusion.

Should we accept it? It may seem strange to assert this flat-out; for surely there are empirical theories of language that make use of this very notion of language (for example field linguistics, where one studies the grammar of a particular language in a community). It may be that we should understand Chomsky in the context of talking about I-linguistics. In any case, it is very likely that the linguists who use this notion of language are well aware that it is an idealization. The notion of a common public language can be useful for certain ends as long as it is appreciated that we are dealing with something that isn't scientifically tractable judging by the standards of MN. For instance, it makes perfect sense to talk about Japanese as a language in this regard, with its own morphemes, rules of combination etc. when the aim is to, for instance, learn Japanese, talk in a common sense fashion about the language, or study the grammar of Japanese (much like the taxonomical study mentioned in chapter two, as opposed to universal grammar). But if we want the kind of explanatory theory that Chomsky is after, we will plausibly focus our attention elsewhere. As noted, however, this has no obvious bearing on the existence of public words or word-world relations.

In conclusion then, this argument is not convincing in its current state. In order for it to work, it would have to show why the fact that something is difficult to individuate entails that it does not exist. More importantly, the non-existence of public words is not sufficient for the rejection of all kinds of reference based semantics.

### 4.3.2 Problems with the Referents

In addition to the worry that public words do not exist, there is a similar worry that many of the objects referential semantics assumes that we refer to, do not exist. In cases such as 'London' refers to London' we may, according to Chomsky, doubt whether there really is such an entity as London that the expression 'London' picks out: "Such terms as *London* are used to talk about the actual world, but there neither are nor are believed to be things-in-the-world with the properties of the intricate modes of reference that a city name encapsulates." (Chomsky, 2000, p. 37) Why is this a problem for referential semantics? Emma Borg writes:

The problem can be highlighted by noting that a term like 'London' can be used to pick out many different facets of the city it is supposed to refer to; thus in some contexts 'London' picks out a physical location ('London is east of Oxford'), in some a governmental structure ('London has a mayor'), and in some its inhabitants ('London is growing'). (Borg, 2009, p. 37-38)

We start out with the intuitive idea that ‘London’ (like other names) picks out a thing in the world. But, it is alleged, we run into problems because ‘London’ picks out different kinds of things in these sentences. I think it is somewhat misleading to say that different *things* are being picked out. Take for instance: ‘London is east of Oxford’. A natural interpretation of this sentence is that ‘London’ picks out London, and ‘is east of Oxford’ is a predicate describing ‘London’. If we can say this in all the examples involving ‘London’, it is not clear to me that ‘London’ is used to pick out different facets or aspects of the referent. Rather, ‘London’ refers to London (the same thing) in all the cases, but there are different things being predicated of it. So the problem seems to be that it is counter intuitive that one thing should satisfy these different predicates. There is a third way of interpreting the argument, namely that it points not to a problem with combining different predicates when referring to one object, but rather to a problem with the individuation of things like cities. Where does London start, and where does it end? Can London survive being destroyed and rebuilt somewhere else? In either interpretation, the key point seems to be that there cannot be things with these kinds of intricate properties. If this is right, there can, according to the Chomskyan, be no referential theory of semantics which utilizes such entities as referents. Similar examples are repeated throughout Chomsky’s *New Horizons in the Study of Language and Mind* as well as in the writings of other proponents of internalism. Let us look at a few more examples before we turn to an assessment of the argument.

Consider the word ‘book’. It has both a concrete, material component (‘that book on my desk has a coffee stain on it’) and an abstract component (‘Franzen’s latest book sold very well in Europe’). These different perspectives can even be combined in a single expression (‘that book you see there on my desk sold over a million copies’). If we think of the word as having one referent, even this simple case seems puzzling. Is this referent a concrete or an abstract object? Chomsky suggests, following David Hume, that “The book on my desk does not have these strange properties by virtue of its internal constitution; rather, by virtue of the way people think, and the meanings of the terms in which these thoughts are expressed.” (Chomsky, 2000, p. 16) In my understanding of Chomsky, his key point is that word-meanings are crucially dependent on human perspective, and that this arguably shows that words do not denote external objects. In other words, the referent of the term ‘book’ has different properties depending on context and how we think about matters, not because books are objects that can be both concrete and abstract, metaphysically speaking. This problem is not restricted to artefacts. Whether or not something falls under the rubric of water, for



example, is not independent of human minds. Let us assume that we have before us a cup of tap water. We could all agree that the cup contains water. If we dip a bag of tea into it, it is no longer considered water; it is tea. Let us then imagine a second cup filled with tap water, but this time around tea has been dumped in the water reservoir connected to the tap, so that the liquid that comes out is chemically indistinguishable from tea. According to Chomsky we would say that the content of the second cup is (contaminated) water, not tea (Chomsky, 2000, p. 128). What the chemist might say is irrelevant to how we use the word ‘water’, and the simple idea that ‘water’ denotes the external substance water (such as  $H_2O$  give or take a few impurities), should be rejected.

It seems like the water-example rests heavily on intuitions that it is far from certain that everyone would agree to. In the example, Chomsky claims that we would refer to the substance as water even though it is tea, chemically speaking. But is this true? If we imagine that this happens to a person, call him Eric, I think it is equally plausible to imagine that when he notices that what comes out of the tap is some light brown liquid, he will ask what it is, rather than call it water. When he inspects it, and finds out that it smells like Earl Grey tea (and, if he is feeling courageous, he will perhaps even find out that it tastes like Earl Grey tea), he would call it tea, calling out to his wife: “Can you believe this? There is tea coming out of the tap!” So the intuition behind this example could be contested. But either way, even if we don’t accept this version, I think the point that Chomsky is putting forth, namely that the application conditions of such terms as ‘water’ are vague and context-dependent, can be established through other examples. It is enough to point out that we can use ‘water’ to refer to the river Thames in one context, and chemically pure water in another context.

Pietroski (2005)<sup>23</sup> asks us to consider the sentence ‘France is hexagonal and it is a republic’. He notes that this sentence gives rise to some peculiarity. An utterance of it can certainly be true. But going by the truth-conditional theory, the conditions for this sentence to be true are that something (in the relevant domain) is France, is hexagonal and is a republic. But are these conditions met? Pietroski points out that one might doubt whether there could be such a thing that is both hexagonal and a republic. What kind of a thing is that? The problem that faces the kind of theories that invoke the notion of truth and reference, is that it follows from accepting the truth of this sentence that there is an  $x$  such that  $x$  is both hexagonal and a republic, and this conflicts with our intuitions about the meaning of these predicates (Pietroski, 2005, p.

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<sup>23</sup> Pietroski takes these arguments to support the rejection of truth-conditional semantics, but here we are primarily concerned with reference.

267). The intuition behind this argument is pretty straightforward; the meanings of ‘hexagonal’ and ‘republic’ cannot be combined into a conjunctive predicate. If we agree that ‘France’ denotes a geographical entity, we cannot say about this very entity that it is a republic. But clearly we have no problems thinking and talking about France in this manner, expressing true or false claims. What is the explanation for this? Pietroski suggests that instead of thinking about ‘France’ as linked to one external entity, we should accept an internalist explanation based on the idea that these predicates (‘is hexagonal’, ‘is a republic’), are associated with different types of variables, and that they thus have different linguistic features (Pietroski, 2005, p. 268). We must then try to explain how these features can: “be combined to create complex expressions that can be used (in ways natural for humans) to make various kinds of claims.” (Pietroski, 2005, p. 268) Hinzen suggests that whilst what objects we refer to (an abstraction or a concrete, for example) by a word depends on our perspective, the *concepts* remain stable. Thus, we have a concept of France that involves its geographical shape, its governmental structure, its cuisine and so on. We can then use the word ‘France’ to refer to France (Hinzen, 2007, p. 82).

What should we say about this argument? There are several issues in play here, and I will try to deal with them one at a time. I will look at some plausible replies to the argument and argue that Chomsky’s argument does not succeed.

A first natural reply to cases such as ‘book’ and ‘France’ is to accept the intuition that the referents of these terms have a somewhat strange amalgam of properties, but to propose that this is because these words have multiple meanings. The apparent problem can then easily be fixed by way of indexing the terms so as to mark the different meanings. We could for instance say that ‘London’ has more than one referent, or more than one meaning, and index them accordingly. We could then distinguish between ‘London<sub>1</sub>’ (the geographical area), ‘London<sub>2</sub>’ (the government) and so on. In the case of ‘book’, we could say that the type/token ambiguity can be dealt with by distinguishing them: book<sub>1</sub>, book<sub>2</sub>.<sup>24</sup> I think the argument turns on whether or not something along the lines of this is a viable option for the referential semanticist. I will leave it open whether or not this is a strategy worth pursuing, but I see no clear reason why this argument in itself should rule it out.

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<sup>24</sup> One could protest by pointing to the cases where the same word is used with both meanings, for instance in ‘France is hexagonal and it is a republic’, but this seems harmless as long as we accept something like the following ‘France<sub>1</sub> is hexagonal (this is tied to <sub>1</sub>) and it<sub>2</sub> is a republic (this is tied to <sub>2</sub>)’

The proponent of referential semantics may further respond by rejecting the intuition that there are no such things as ‘London’. Chomsky’s argument seems to depend on quite substantial metaphysical assumptions. If we accept that there are vague or abstract objects which can serve as referents, the argument will not work. Recall Pietroski’s example. If we claim that ‘France’ refers to an abstract object, the problem seems to disappear. The alleged problem was that the co-called referents have conflicting properties, either in a weak sense (they have properties that intuitively do not belong together) or in a strong sense (they have self-contradictory properties, such as both being concrete and not concrete). France exists, *ex hypothesi*, as a country, an abstract, geopolitical entity. This behooves us to look at France as more than a spatially located thing. The reason why it seems that the meanings of the predicates ‘hexagonal’ and ‘republic’ cannot be combined, is that we presuppose that there cannot be objects of which both are true. But this problem disappears if we accept that there are such things as countries. The problem of individuating objects also disappears, it seems. For this problem to exist we need to presuppose that there cannot be vague objects (objects of such a nature that we can raise questions about them that do not have determinate answers) or abstract objects. Of course, whether or not there are such objects is a matter of philosophical dispute, but Chomsky’s argument seems to presuppose rather than argue that there are not.

But even if we accept this, there is another intuition behind the examples Chomsky presents. It seems that Chomsky thinks that since such things as books or countries are dependent on human conceptualization, this in itself makes them unsuitable as referents. The idea that how we think about and individuate objects is relative to interests and our conceptual framework is not a new one. It bears some resemblance to deflationary intuitions in contemporary meta-metaphysics; many ontological questions are thought to be pseudo-questions; they are terminological, or in other ways dependent on our conceptualizing and our use of language, rather than being about the world “as it really is” (see Manley, 2009, p. 2). One example is the dispute between the mereological universalist and nihilist, who respectively accepts and denies the truth of sentences such as: ‘There exists something that is the sum of The Eiffel Tower and my left arm’. For the universalist (who believes that collections of parts always compose wholes, irrespectively of how scattered they are), this sentence comes out as true. For the nihilist (who thinks that collections of parts never compose wholes), the sentence comes out as false. For the meta-ontological deflationist, however, this is a typical example of a pseudo-problem; there is nothing theoretically interesting at stake here, it is just a matter of

decision, of what conceptual framework we employ, or how we “slice up the world”. It seems that Chomsky has a similar idea in mind:

... scattered entities can be taken to be single physical objects under some conditions: consider a picket fence with breaks, or a Calder mobile. The latter is a “thing”, whereas a collection of leaves on a tree is not. The reason, apparently, is that the mobile is created by an act of human will. If this is correct, then beliefs about human will and action and intention play a crucial role in determining even the most simple and elementary of concepts. (Chomsky, 2007, p. 203)

This point can be taken to show that the referents fail to exist in a certain way, namely as non-relative mind-independent entities.<sup>25</sup> But does this in itself show that referential semantics must be given up? I fail to see that this follows from the argument. Chomsky’s observations are arguably compatible with theories which accept that the meanings of terms depend on how they are used. It does not follow from the fact that things like books and water are dependent on human conceptualization or conventions for use that they do not refer. David Lewis (1975), for instance, is a proponent of a version of referential semantics where conventions play a crucial part in the determination of meanings. It could be, of course, that such approaches are mistaken, but the point here is that this argument does not seem sufficient for establishing this.

In conclusion, the Chomsky’s reflections can be employed to show that reference is not a relation that holds between words and mind-external entities independently of the context of utterance. But for one thing, this is hardly news to the semanticist and what is more, it does not threaten other conceptions of reference. We will, however, return to a more in depth discussion of some of these issues when we turn to Peter Ludlow’s analysis of the debate.

### 4.3.3 The Implausible Commitments Argument

The argument above questioned the possibility of there being suitable referents corresponding to words such as ‘London’, ‘tea’ and ‘book’. Another problem with referential semantics, according to the Chomskyan, is that the supposition that words refer to things in the world seem to lead us into an ontology consisting of strange or in other ways unwelcome entities.

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<sup>25</sup> Analogously to the argument against public words, Chomsky does not commit himself to a view according to which entities such as France, books or Calder mobiles do not exist as objects we can talk about, interact with and so on (as long as we do not demand of all things existing that they are independent of human conceptualization).

This argument resembles the one above, but instead of claiming that ordinary objects (which we are inclined to think exist) are problematic as referents, it states that referential semantics leads to postulation of entities that we should not think exist. Chomsky writes:

If I say “the flaw in the argument is obvious, but it escaped John’s attention,” I am not committed to the absurd view that among things in the world are flaws, one of them in the argument in question. Nevertheless, the NP *the flaw in the argument* behaves in all relevant respects in the manner of the truly referential expression *the coat in the closet*. (Chomsky, 1981, p. 324)

Peter Ludlow interprets this as saying that: “we really can’t take seriously a theory which commits us to such entities” (Ludlow, 2003, p. 147). The argument seems to be that since the two expressions are alike in relevant respects, and since ‘the coat in the closet’ is, *ex hypothesi*, a referring expression, we are equally committed to the existence of flaws. But, the Chomskyan claims, we should not think that flaws exist. Hence, referential semantics is false.

Pietroski argues along the same lines (2005, p. 276). His examples are:

- (1) The government does little for the sake of the average American, whose children will inherit the massive deficit that is accumulating.
- (2) Hamlet lived with his parents in Denmark.

We obviously can use these expressions to say meaningful things, but if we assume that the terms refer to things in the world, and that the sentences in which they occur have truth conditions, we seem to end up admitting that there are things in the world like Hamlet, the average American and massive deficits.<sup>26</sup> Pietroski suggests that if we want a semantic theory according to which words denote real entities, we may ultimately end up with Lewisian possible worlds: “And if we assume that such theories [of truth] are needed, no matter how implausible their ontological implications, it becomes very hard to offer principled reasons for resisting Lewisian conclusions.” (Pietroski, 2005, p. 278) On my reading of Pietroski, he attributes to David Lewis the ontological resources to accommodate referential semantics simply because in Lewis’ view, these referents really exist. He suggests that we cannot have it both ways; keeping a semantic theory that upholds word-world relations, whilst avoiding unpopular ontological commitments.<sup>27</sup> But Pietroski does not think we should embrace

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<sup>26</sup> According to Frege, ‘Hamlet’ does not refer (the term has no *Bedeutung*, only *Sinn*), a weakness he ascribes to natural language (Frege, 1892, p. 218).

<sup>27</sup> Pietroski does not rule out the possibility of such a view completely, but claims that it seems difficult to combine referential (truth-conditional) semantics with ontological modesty.

Lewisian metaphysics, because this picture, while “coherent and interesting”, is “still incredible” (Pietroski, 2005, p. 277-278).

Do these considerations threaten referential semantics? First of all, for this argument to go through, we must make sure that we look at the underlying logical form of the expression, not only its surface structure. That is, ‘the flaw in the argument’ is on the face of it structurally equivalent to ‘the coat in the closet’, but it may be that this surface structure is misleading, concealing its true (logical) structure. Chomsky claims that these two expressions are similar in all relevant aspects, but is this true? We could argue, similar to what Russell did for denoting phrases, that the grammatical form of a natural language expression is not transparent. Russell aimed to show that denoting phrases do not function as pure referring terms when they operate in sentences. Thus the meaningfulness of the sentence ‘The man who wrote *Syntactic Structures* is an American’ is not dependent on the definite description picking out a person. Rather, what we are really saying (and thinking) is that there is a person who wrote *Syntactic Structures*, there is at most one person who wrote *Syntactic Structures*, and whoever wrote *Syntactic Structures* is an American. (Some may recognize this formalization, where S is a predicate ‘wrote *Syntactic Structures*’ and A is a predicate ‘is American’  $(\exists x)(Sx \ \& \ (\forall y)(Sy \supset y=x) \ \& \ Ax)$ ) Following Quine (1948), we can extend this to singular terms as well. I will not go any deeper into this; it is simply intended as an illustration of a point of view from which the surface structure of natural language expressions obscures its logical form. However, this strategy still accepts the idea that there is a correspondence between the structure of language and the structure of the world, and that this structure can be accounted for in a semantic theory.

Could we analyze away the implausible commitments in a similar manner? In order to do so, we need to find the logical form of the noun phrase ‘the flaw in the argument’ and ‘the average man’. Higginbotham (1985) suggests that ‘the flaw’ functions as a modifier, not a noun, so that the sentence ‘There is a flaw in the argument’ is true iff there is an argument and it is flawed. (Rather than: ‘There is a flaw in the argument’ is true iff there is an argument and there is a flaw in it.) Similarly, ‘average’ in ‘the average man is concerned about his weight’ is not to be viewed as an adjective, but as an adverbial. This is similar to the sentence ‘Let’s have a quick cup of coffee’ – ‘a quick cup of coffee’ should not be understood as expressing that the cup of coffee has the property of being quick, but rather that we drink it in a certain manner (namely quickly). By the same token, ‘the average man is concerned about his weight’ should be understood as saying something like this: ‘on average, men are concerned

about their weight'. As a response to this solution, Chomsky offers examples that arguably make matters more complicated. What about the sentence 'Your report on the average family fails to make it clear that it has 2.3 children' or 'We fixed three of the flaws you found but the rest of them resisted our efforts.' (Ludlow, 2003, p. 148)? With regard to this latter sentence, Chomsky raises doubts whether 'flaw' could be treated as a modifier. One could reply that what we really mean by uttering this sentence is that there are steps in the argument that satisfy the predicate of being flawed: 'We fixed three of the flawed steps you found but the rest of them resisted our efforts.' Does this solve the problem? Ludlow writes:

... glosses of this nature have to be justified at some point, and there is a heavy burden to show that the introduction of this proposed hidden structure comports well with the rest of what we know about the syntactic form of these constructions. Still more, it has to be shown that general rules are available and not just case-by-case fixes. Any attempt to pursue the Higginbotham course here will not be a trivial exercise. (Ludlow, 2003, p. 149)

I agree with Ludlow that this strategy seems challenging. It is hard to see how it could make exceptions for every phrase with so-called implausible commitments whilst still holding that in general, singular terms refer to objects. What is more, the problem with fictional names calls for a different solution. It seems highly unlikely that one could point to a structural difference here.

Another way of responding to the implausible commitments-argument is to deny that the commitments are implausible in the first place. The referential semanticist could respond by pointing out that the structural similarity between 'the flaw in the argument' and 'the coat in the closet' does not entail that flaws and coats are ontologically similar. Intuitively, that is just plain false. To claim that singular terms refer is not to say that all singular terms refer to a particular kind of object. Furthermore, one could ask what the difference between postulating an argument and postulating a flaw is. They are both abstract, can they not both exist as abstract entities? If some metaphysical nihilist inclinations lead one into doubting the existence of flaws, it is not clear that things like arguments would survive either (or coats, for that matter). If we raise the bar for what it is to exist to the level that only concrete, physical objects exist (perhaps, even, only objects that are posited by physics), then most things humans talk about do not exist. It may be that the Chomskyan could argue that pretty much every object humans talk about fails to exist, but this extreme conclusion needs further argument. The proponent of referential semantics can thus object to this argument by denying that the commitments are implausible. Flaws exist, just like other abstract objects such as

defects, holes, and numbers. Similarly, we could respond cases such as ‘Hamlet lived with his parents in Denmark’ by accepting that there are such things as fictional characters, and that this is what ‘Hamlet’ refers to. The sentence is true iff Hamlet (the fictional character) lived with his parents in Denmark, and false otherwise.

The implausible commitments argument turns on the intuition that such objects are implausible, but *pace* Chomsky and Pietroski, I can see no clear reason why they should be in so far as abstract objects are acceptable. The Chomskyan could reply that there is a relevant difference between arguments and flaws. There are no such things as flaws, the Chomskyan insists. They act strange. They do not exist independently of the things they are in. Granted, there is a sense in which such things as flaws and holes are metaphysically puzzling, but the conclusion that they do not exist still needs to be argued for, and without this conclusion, there is no reason to reject referential semantics on the basis that ‘the flaw in the argument’ is structurally equivalent to ‘the coat in the closet’. Either one needs to argue that things like flaws do not exist in any way, or one needs to argue that referential semantics is committed to the thesis that all referring terms refer to certain kinds of things. This last option seems to me weak; I cannot see that any referentialist theory touched on so far is committed to it. Referential and truth conditional semantics typically makes idealizations. They start out by thinking about sentences as used in ordinary contexts, talking about ordinary objects, and so on. It seems that this argument points to the (numerous) exceptions where this does not fit with the ideal situation. It seems reasonable to direct attention to the fact that natural language is very complex, and that the story told about the ideal situations (in which a term simply refers to a straightforward object) does not explain all kinds of referential use of expressions, for instance in the cases when we talk about fictional characters. Such “implausible” entities as fictional characters may constitute a *prima facie* worry, but the Chomskyan has not shown by these considerations that the referential semanticist has no way of accommodating such phenomena.

My own hunch is that it is true that in so far as we postulate a relation between words and the world, referential semantics is committed to the existence of referents. But this is a relation between words and things in the world as viewed from the human perspective. I agree that it is implausible to believe that there are such things as abstract objects, fictional characters and indeed artefacts like tables and chairs in the a mind-independent world, seeing as these things are (at least in part) products of conceptualization. It may be that the considerations Chomsky and Pietroski bring up rest on (or perhaps motivate) the idea that a conception of metaphysics



according to which these objects exist independently of conceptual schemes are wrong. But this observation does not entail that referential semantics must be given up.

#### **4.3.4 Concluding Remarks**

So far we have looked at three Chomskyan arguments against referential semantics. I have argued that these arguments are not conclusive in their current state. They do not seem to threaten all forms of referential semantics. I also pointed out that the Chomskyan arguments seem to rest on some substantial philosophical assumptions. In the next chapter, I will take a closer look at these assumptions. In this connection, I will bring in Peter Ludlow's claim that the Chomskyan arguments are best understood as targeting language-world isomorphism and some metaphysical positions rather than reference in itself.



## 5 Ludlow's Analysis

In “Referential Semantics for I-languages?” Peter Ludlow analyses Chomsky's arguments against reference and argues that Chomsky's view is not incompatible with all forms of referential semantics: “Chomsky's views do not exclude the kind of referential semantics that many philosophers favor.” (Ludlow, 2003, p. 140) He further argues that Chomsky does not have a problem with reference *per se*, but rather with language-world isomorphism (the idea that language and the world have structural similarities) (Ludlow, 2003, p.146). If Ludlow is right, we can have it both ways: We may combine Chomskyan linguistics (which studies I-language) and referential semantics.<sup>28</sup>

In this subchapter, we will look at Ludlow's analysis of Chomskyan arguments against referential semantics. Our main concern may seem orthogonal to Ludlow's, seeing that Ludlow is in the specific business of combining referential semantics with I-language.<sup>29</sup> In this thesis, I am not primarily interested in discussing the possibility of such a combination, but rather to discuss the import of the various Chomskyan arguments against traditional philosophical conceptions. There are, however, two reasons why it is relevant to include Ludlow in this discussion. Firstly, if it is possible to combine referential semantics with I-languages, it follows that Chomsky's arguments fail to implicate that there can be no such thing as referential semantics. Secondly, I think Ludlow provides a good perspective from which to view the arguments. We saw, when going through the different arguments in 4.2, that there seemed to be some philosophical ideas presupposed in the arguments. Ludlow provides, in my view, a sound analysis of what these ideas are.

### 5.1 Different Notions of Reference

Ludlow distinguishes between three notions of reference.<sup>30</sup> He names them  $R^0$ ,  $R^1$  and  $R^2$ .  $R^0$  amounts to a relation between signs and internal representations. This is a common way of understanding reference in linguistic theory, artificial intelligence research and some

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<sup>28</sup> In *The Philosophy of Generative Linguistics* (2011), Ludlow advocates a conception of language as  $\Psi$ -language instead of I-language. In short, a  $\Psi$ -language can be broad or narrow. A broad version of  $\Psi$ -language allows that syntactic states can be individuated widely (it can depend on features of the person's environment), whereas a narrow version corresponds to I-language.

<sup>29</sup> There have been various attempts to join Chomskyan linguistics and referential or truth conditional theories of meaning besides Ludlow's. See for instance Larson and Segal (1995).

<sup>30</sup> The division is not taken to be exhaustive.

philosophical theories.<sup>31</sup> To provide a semantic theory for a natural language would, in this view, involve a mapping of an expression to a representation, or “semantic marker” that “encodes the meaning of the expression” (Ludlow, 2003, p. 141). The problem with this is, according to Ludlow, that it gives no more than a mapping from expressions of a language to another system of representation. It bears no connection to the external world; it is merely a system of translation, so to speak. Thus, the proponents of traditional referential theories would find this theory lacking. In the second view of reference,  $R^1$ , the reference of a term is thought of as some direct (causal or other) relation between that term and the world. This would amount to a direct-reference theory in the spirit of John Stuart Mill (1843). According to the third view,  $R^2$ , the reference relation is a relation between a speaker and the world, and it involves (at least) the linguistic agent, the expression, context and aspects of the world. Crucially, we can understand “aspects of the world” in different ways – as objects in the world, as phenomenological aspects of the world, or as Humean sense data. According to Ludlow, reference taken as a  $R^2$  relation between words and the world is compatible with I-language (Ludlow, 2003, p. 151). Since  $R^2$  involves context and the speaker and arguably fits nicely in with the idea that people refer to things using words, rather than words themselves referring to things, this notion of reference intuitively looks more promising than  $R^1$ .

## 5.2 Language/World Isomorphism

In Ludlow’s view, Chomsky’s criticism of philosophical theories of meaning employing reference does not stem from a disagreement over reference *per se*, but from two other sources. The first one is a doctrine he labels language/world isomorphism (LWI). According to Ludlow, the proponents of referential semantics have typically endorsed LWI, whereas Chomsky does not. The second source of disagreement concerns how one understands “aspects of the world”. As we have seen, referential semantics advocates a relation between linguistic items (words and sentences) and the world. How we understand the latter is crucial. I suggested, when discussing problems with the referents and the implausible commitments argument, that these arguments only target referential theories which suppose that the referents exist in a certain kind of way. If Ludlow is right, it is these auxiliary assumptions often contained in the referential semantics package, rather than reference in itself, that give rise to the Chomskyan skepticism towards traditional referential semantics.

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<sup>31</sup> See Katz, J. and Fodor, J. 1963. “The Structure of a Semantic Theory”. *Language*, 39, pp. 170-210 for a view in which expressions are tied to symbols in an internal system of representation.

Ludlow describes LWI as the idea that there is an isomorphism holding between logical forms and the world. He traces this view back to Kant, as well as early Wittgenstein's picture theory of meaning (according to which thought, language and reality share a similar structure). Ludlow does not provide us with a definition of LWI, but he points out that the view holds that a proposition is isomorphic in structure to a state of affairs.<sup>32</sup> This is motivated by the idea that such isomorphism is necessary for the proposition to be about that state of affairs (and hence about the world). Ludlow points out that the similarity must hold between the world and the proposition "under analysis", that is, the "surface form" of the proposition may conceal its logical form, and we are interested in the underlying logical form of the proposition (Ludlow, 2003, p. 145-146). It is the logical forms, not language/linguistic items *per se* that figure as one of the relata in a relation of reference in this view. A linguistic expression that is analyzed so as to reveal its true logical structure (see also 4.1 and 4.3.3) would then mirror an aspect of the world.

Ludlow then goes on to look at Chomskyan arguments against the referential semantics. He thinks that Chomsky's arguments are aimed at either  $R^1$  or  $R^2$  in conjunction with LWI. He maintains that  $R^2$  without LWI remains unharmed by Chomsky's arguments, and thus represents a form of referential semantics which is consistent with the I-language approach. Earlier in this chapter we discussed Chomsky's worry over the referents in referential semantics, and Ludlow distinguishes between two slightly different versions of this argument (he calls them "The Type/Mismatch Argument" and "The Misbehaving Object Argument"). The third argument he considers is the Implausible Commitments Argument, also discussed above. Because Ludlow interprets and formulates his interpretation of Chomsky's arguments by way of introducing notions not used by Chomsky, I will for the purpose of elucidating Ludlow's argumentative strategy present one of these arguments, allowing some overlap with previous discussion. This will, I think, provide us with a clear enough idea as to how he understands Chomsky's views on reference.

## 5.3 The "Type Mismatch" Argument

Let us take a look at a well-known example:

(1) Water is  $H_2O$

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<sup>32</sup> This view seems congenial to Moore and Russell's identity theory of truth, in which a true proposition is identical to a fact, as well as later correspondence theories of truth (See Glanzberg, 2009).

According to Putnam (1975) the term ‘water’ refers to  $H_2O$ . Granted this, a referential semantics assigns  $H_2O$  as the semantic value of water. There is a problem with this solution, Chomsky contends, because it invokes a mismatch between what speakers intuitively mean by water and what the reference of the term is taken to be. According to Ludlow, Chomsky (tacitly) operates with a distinction between an I-substance and a P-substance. A P-substance would be the stuff that matters in a physical/chemical theory (a scientific theory), and  $H_2O$  clearly is a P-substance in this sense. An I-substance is, by contrast, what we are intuitively talking about when we talk about water. What Chomsky’s argument shows is that the I-substance does not match the P-substance. That is, when speakers talk about water, they are not referring to  $H_2O$ , but to something else. Recall Chomsky’s example with the cup of contaminated tap water which we may use ‘water’ to refer to even though it is indistinguishable from tea. The point was that what determines the alleged reference to the term ‘water’ are not chemical theories, but a host of factors (context, the social environment among other things). Ludlow sums it up:

What we are talking about when we use the term “water” – the I-substance – depends upon the social setting in which we find that substance. But according to referential semantics, the meaning of the term is supposed to depend upon the chemical composition of the substance referred to – it’s supposed to be a P-substance. Conclusion: referential semantics (if respecting the LWI hypothesis) will not track the intuitive notion of meaning. (Ludlow, 2003, p. 150)

Ludlow takes Chomskyan arguments like the type/mismatch argument to show that referential semantics in conjunction with LWI is problematic because it takes P-substances to be the referents of natural language expressions (Ludlow, 2003, p. 151).

Is LWI committed to P-substances? According to my understanding, there is no necessary connection between holding LWI and taking P-substances as referents. LWI assumes structural similarities between linguistic expressions and the world, but is neutral as to what “the world” is taken to be. But to embrace LWI is to assume that there is a tight connection between logical forms and the world, so if we believe that these substances are what the world consists of, P-substances are the best candidates.

Note that in the water example it is already presupposed that the referential semanticist takes ‘water’ to refer to a P-substance. This is, as already hinted at, not necessarily something that all proponents of referential semantics would embrace. I suggested that we could allow that the referents are abstract or vague objects, for instance. Either way, I think the most

reasonable way of interpreting Chomsky's argument is that he takes this to be what referential semantics assumes. If this is the case we were right to conclude earlier that these kinds of arguments are compatible with certain types of referential semantics (namely those which are less "picky" about what kinds of things are suitable as referents).

## 5.4 Three Solutions

How should we respond to arguments like this? Ludlow mentions three strategies:

- 1) We keep referential semantics, but reject LWI.

This option is possible, since LWI is not necessary for reference: We could just say that terms refer, not to one single entity, but to various things depending on the circumstances. In this view, there is no one to one correspondence between a term and a "Bedeutung". 'Water' could refer to H<sub>2</sub>O on some occasions whilst refer to the river Thames in another context. This preserves some relation between language and the world, and the possibility of a referential semantics is not ruled out, but it would be much less straightforward. Ludlow believes that Chomsky would not object to such a view (Ludlow, 2003, p. 151).

Now to the second option:

- 2) We respond that these various individualist claims about what words refer to aren't authoritative.

This is a "standard philosophical maneuver" associated with Hilary Putnam and Tyler Burge. According to this view we keep LWI, and claim that 'water' still refers to H<sub>2</sub>O, denying that referential semantics need to track what speakers intuitively mean by 'water'.

Putnam has suggested that there is a "Division of Linguistic Labor". In this view, there is no need for every member of society to know what the words of their language refer to as long as there are experts who can be consulted in cases of doubt (Putnam, 1973, p. 309). If this is right, the experts have the final authority as regards the reference of 'water'. Thus, if a chemist were to inspect the liquid and inform us that it is not water, we would stand corrected.

A semantic theory then would not account for the competence of an individual speaker, but rather for the meanings of words in a public language. One could thus argue that the terms refer either to P-substances (Putnam) or to S-substances (a substance individuated by norms in

the relevant community). The latter alternative would amount to social externalism *a la* Burge (1979). Taking S-substances as referents could seem promising, seeing that the argument showed that what speakers refer to depends on the social context, but as Ludlow notes there remains a discrepancy between I-substances and S-substances. Burge's example is concerned with Oscar who claims that he has arthritis in his thigh. Unbeknownst to him, arthritis is an ailment that affects the joints, so he cannot possibly have arthritis in his thigh – he is simply wrong (Burge, 1979, p. 77-79). Chomsky, on the other hand, would say that to Oscar, 'arthritis' in this context refers to the painful condition in his thigh (or, rather, that Oscar *uses* 'arthritis' to refer to this condition). Of course, examples like this appeal to intuitions, and hence turn on whether we share the intuition. It is the case that ordinary competent speakers of English use 'water' to refer to chemically pure H<sub>2</sub>O, contaminated water and rivers. What is more, they have no problem succeeding in communication and expressing true beliefs. If we want to suggest that competent speakers are wrong about these word meanings, this seems to be at odds with the apparent data.

Chomsky would not accept this alternative. Ludlow writes:

If there is an isomorphic relation between the content of Oscar's utterance and the syntactic form of that utterance (in other words, if LWI holds), and if the content of Oscar's utterance depends upon the environment in which he utters it, then it looks like the syntactic form of Oscar's utterances doesn't depend solely upon facts about Oscar in isolation. And this is just to reject the I-language thesis. (Ludlow, 2003, p. 152)

In virtue of what does this conflict with I-language? The issue turns on how we understand Chomsky's internalism. Remember that Chomsky's version of internalism does not amount to the denial of the idea that mental states are individuated by reference to features external to the agent. Rather, internalism is a methodological doctrine, urging us to study internal states in the quest for theoretical understanding of language (Chomsky, 2003a, p. 269). However, Burge understands internalism as concerning "not the locus of the psychological states, or the best way to study them, but whether being in them presupposes individual-environmental relations" (Burge, 2003, p. 454). If we follow Burge's notion of internalism, this solution is clearly incompatible with I-language. It is less clear that it is incompatible with I-language as understood by Chomsky. In my view, this issue has less to do with internalism in particular and more to do with Chomsky's rejection of public languages and community norms in general. Ludlow is right if understood as saying that it is incompatible with Chomsky's overall view of language, but it seems less obvious that it conflicts with internalism *per se*.



namely because Chomsky opens up for the idea that mental states can be individuated by reference to factors that are external to an individual (Chomsky, 2003a, p. 269, see also 2.2.1 above). In any case, the incompatibility between this externalist solution and I-language has no bearings on theorists working outside the Chomskyan framework.

Ludlow considers one last option:

- 3) We may keep LWI, but give up the P(S)-substances, that is, we may accept that there really are such things as I-substances.

This is Ludlow's preferred alternative. How does this differ from rejecting LWI? In my understanding, this third option differs from the first (rejecting LWI) in that it locates the "strangeness" in the world rather than in language or the relation between language and the world. The strangeness here is to be found in the world because these I-substances really exist out there. If we reject LWI, however, the world may be constituted of natural kinds and other P-substances, but the language does not track these systematically. In this view then, I-language, LWI and  $R^2$  can be retained, as long as words are taken to refer to I-substances rather than P- (or S-) substances. This is supposed to disarm both the implausible commitments argument and the type/mismatch argument.

With regard to the former, we accept that there are entities like flaws, average men et cetera. As for the latter the mismatch disappears once we appreciate that the words do not pick out chemical substances like  $H_2O$  and the like; 'water' refers to whatever people think of as water. Admittedly, this is a matter of biting the ontological bullet (accepting the "implausible commitments"). Ludlow thinks that things like flaws and the average man aren't logically impossible; "and one might wonder why they should be considered any less real than, say, tables and chairs." (Ludlow, 2003, p. 153) In "Referential Semantics for Narrow  $\Psi$ -Languages", Ludlow adds that: "... the kind of entity being posited doesn't seem particularly unusual to me – the average family is simply an abstract object that statisticians speak of as having fractional values (2.3 children, for example)." (Ludlow, 2011, p. 135)

What should we say about this? Intuitively it seems plausible to accept some of what Ludlow calls I-substances, for instance flaws. However, one could suspect that other I-substances are more problematic. Ludlow only argues for the plausibility of I-substances that typically counter the "implausible commitments argument" such as flaws and average families. One could be sympathetic to Ludlow's point with regard to the implausible commitments

argument. If we welcome tables and chairs into our ontology, why not go all the way and accept flaws as well? These are abstract notions and we may choose to include them into our ontology without obvious problems as long as we reject scientific realism and forms of ontological nihilism. Intuitively, one could object that the I-substances that are supposed to replace the P-substances (and thus solve the “type/mismatch argument” and “misbehaving object argument”) are more questionable. Take the I-substance water. This substance, one could claim, is a very strange entity, changing its properties (such as its chemical properties) from one social context to another. One could attempt to disarm this objection by suggesting that we look at the I-substances as individuated by their function. In that case it is these functional properties which constitute the I-substance. Hence, the I-substance water does not change its properties from one context to another; it is merely realized by different (chemical) structures. This is less ontologically questionable. But, admittedly, this seems to be a non-trivial addition to Ludlow’s thesis that the I-substances are what we intuitively talk about when we use words. What is more, this proposal would need to be developed in such a way that it is compatible with LWI.

## 5.5 Scientific Realism

In my discussion of the Chomskyan arguments earlier, I concluded that Chomsky seems to presuppose that the referents in referential semantics exist in a special kind of way, namely as concrete P-substances. If we, however, relinquish this idea, then it seems referential semantics is not affected by the arguments. Ludlow draws a stronger conclusion. If he is right, it is not only true that philosophical theories of meaning can traffic in word-world relations but also that the denial of what he labels scientific realism makes it possible to study word-world relations within a Chomskyan framework. In other words, referential semantics for I-languages is possible in this view.

As mentioned, Ludlow thinks that much hinges on the “aspects of the world”. He attempts to substantiate the idea that words refer to I-substances by rejecting scientific realism; the thesis that science is the arbiter of what is real. We have seen that Ludlow thinks that I-substances are far from impossible entities, and this is further supported once we relinquish this form of realism. Without scientific realism, there is no reason to suppose that words refer to P-substances. According to Ludlow, Chomsky commits to scientific realism when he writes:

To be an Intentional Realist, it would seem, is about as plausible as being a Desk- or Sound-of-Language- or Cat- or Matter-Realist; not that there are no such things as desks, etc., but that in the domain where questions of realism arise in a serious way, *in the context of search for laws of nature*, objects are not conceived from the peculiar perspectives provided by the concepts of common sense. (Chomsky quoted in Ludlow, 2003, p. 153, my italics)

Ludlow thinks that this scientific realism is not only controversial; it is also “most likely false”. Ludlow, following van Fraassen (1980), suggests an alternative view according to which scientific theories do not have these strong bearings on ontology: “the entities which science posits do not exist in the same sense as mid-sized, earth-bound objects like tables and chairs. Pursuing this line of thinking, we might say that scientific theories, despite their great interest and utility, are not the arbiters of what’s real.” (Ludlow, 2003, p. 153)

One can question whether there is a substantial disagreement between Ludlow and Chomsky here. It is true that Chomsky operates with a distinction between common sense objects and entities posited by scientific theories and that concepts of common sense have little value in the scientific pursuit of what he calls theoretical understanding. However, this position is better understood as methodological rather than ontological. Chomsky does not, as we have seen, disagree with the common sense idea that tables and chairs exist. It may be the case, though, that this methodological view has implications for ontology if Chomsky believes that theoretical understanding is the (only) source of knowledge of the world.<sup>33</sup>

Ludlow does not provide us with arguments against scientific realism; the ontology of I-substances is merely put forth as an alternative. The benefit seems to be twofold. Firstly, this alternative is compatible with LWI,  $R^2$  and I-language. Is this a good motivation for this view? One might suspect that LWI loses some appeal when tied up with this ontological view, since the World-part is much more “untidy” than on the traditional, scientific realist view. The isomorphism is retained, but the structural relationship between language and the world is a relationship between expressions of I-languages and entities and facts of a rather unstructured and strange nature. The strength of this last point presumably depends on whether one is a scientific realist in the first place; it would not, I think, convince a person who does not

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<sup>33</sup> This depends on how we interpret him. If the science-forming faculty is the best or the only instrument for gaining knowledge, and everything that falls outside its scope is “mysteries”, we could understand him as advocating an epistemological form of scientific realism.

already agree with scientific realism. The second alleged benefit is that in this view, knowledge of I-substances can provide useful data for the study of I-language.<sup>34</sup>

Ludlow writes:

In sum, if referential semantics is possible, then it provides a new source of evidence (intuitions about I-substances) which could shed light on the nature of I-language. Likewise, the study of I-language could shed light on the nature of metaphysics. These possibilities illustrate the great promise of developing referential semantics for I-languages, and they also explain part of the motivation that some of us have for pursuing such theories. (Ludlow, 2003, p. 155)

How does this work? Ludlow thinks that “any grasp we have on metaphysics is by virtue of our having the linguistic representations that we do” (Ludlow, 2003, p. 155). This is a Kantian idea, but here it is the language faculty, rather than the categories of reason that are connected to these intuitions. Another aspect which also separated this idea from Kant’s is that the knowledge we have of the faculty of language is independent and scientific, allowing us to know something about reality. Thus, this approach need not be transcendental (Ludlow, 2003, p. 154). If the world consists of I-substances then it is reasonable, given LWI, to think that the metaphysical intuitions we have about these substances guide the linguistic representation ‘water’. In other words, just as we may gain knowledge of the world by investigating language, we may also gain knowledge of language by using our metaphysical intuitions as data. According to this view ‘water’ is a very complex representation, interacting with other representations of the I-language. Our intuitions of water, as expressed in Chomsky’s examples, show that whether or not something is water depends on context. According to Ludlow, these metaphysical intuitions guide our knowledge of how the word behaves (for instance that it involves a complex representation). Hence word-world relations are possible and beneficial for both metaphysics and for the study of language (Ludlow, 2003, p. 154).

One may, reasonably I think, ask of how much use this information is to the study of language. Ludlow admits that both our knowledge of I-substances and of the relation between them and the linguistic representations is limited. Furthermore, one might worry that the only way in which we can characterize I-substances is by stating that they correspond to I-language representations, rendering their individuation crucially dependent on the linguistic

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<sup>34</sup> A view in which external, relational sciences or enterprises can inform internalistic theories is required for this to be possible. Ludlow mentions some such examples, for instance between ecology (relational) and physiology (internalistic) in studies of primates. I assume that Chomsky agrees with this point (Ludlow, 2003, p. 145).

representations. What is water (the I-substance) if not whatever corresponds to the I-language representation linked to ‘water’? This is hardly informative. Ludlow denies that this is a problem by noting that even though the linguistic representations underwrites our intuitions about I-substances, the latter may still play a fundamental part in guiding and explaining our knowledge of the former (Ludlow, 2003, p. 154). The idea is that the objection loses some force once we note that in the attempt to gain insight into language, we need not begin by investigating the linguistic representations, i.e. the lexicon. Rather, the intuitions we have of water, books, flaws and so on, if understood as I-substances, are non-vacuous because of LWI.

## 5.6 Concluding Remarks

Ludlow has shown us three different strategies, all of which are compatible with reference (in the sense of  $R_2$ ), although the second option (which was to deny that referential semantics need to track what speakers intuitively mean) is incompatible with the Chomskyan view of language. In conclusion, I think Ludlow’s analysis shows that Chomsky’s arguments (at least the type/mismatch argument and implausible commitments argument) do not target reference ( $R^2$ ) *per se*.



## 6 Referential Semantics and Methodological Naturalism

So far we have seen that scientific realism in conjunction with language-world isomorphism is incompatible with referential semantics. This explains why it was difficult, in chapter four, to see why the arguments should pose a threat to referential semantics. In my assessment of the arguments, I presupposed neither LWI nor scientific realism in referential semantics. Hence, my criticism of those arguments does not show that any kind of referential semantics, including those which accept LWI and scientific realism, are unharmed by the arguments. Rather, I have tried to argue that reference in and of itself is not affected by the arguments, and that one may doubt whether referential semantics needs presuppose as much as Chomsky seems to think. Ludlow's preferred solution to this was to reject scientific realism and hold on to LWI.

In what follows, I will first consider Chomsky's response to Ludlow's proposal. Thereafter, I will look at a methodological argument targeting reference. As we will see, it is reason to believe that Chomsky is critical of referential semantics on the basis of methodological considerations. If we accept MN, it seems we cannot have referential semantics with either LWI or scientific realism. But, there is also reason to believe that if we accept MN and the overall Chomskyan approach to language, then any kind of word-world relations is problematic.

### 6.1 Chomsky's Response to Ludlow: A Return to Methodological Naturalism

Chomsky replies that Ludlow's appeal to I-substances is of no interest to science (Chomsky, 2003b, p. 290). His main point, as I understand him, is that any kind of referential semantics, according to which words are taken to pick out an "ordinary thing", falls short of explaining the interesting facts about language and language use. Chomsky thinks that if we are satisfied with such "informal talk about sounds and meanings", we are really doing syntax, i.e. postulating "semantic values" without metaphysical import (Chomsky, 2003b, p. 293). We will take a brief look at the central points he makes.

Chomsky asks us to consider a Martian scientist who wants to study human language. This Martian is eager to find out what the relation “refer” is that links words of human language to mind-external entities such as books and flaws. He also wants to know what books and flaws are. Merely stating the metaphysical thesis that books exist and that ‘book’ or ‘it’ refers to such entities does not answer the Martian’s questions (Chomsky, 2003b, p. 291). According to Chomsky, there is no relevant difference between the Martian and a human scientist interested in arriving at explanatory theories of human language. Hence, when we study humans naturalistically we are studying mind-independent phenomena. Merely postulating I-substances does not tell us anything useful about the world; rather it is a departure from standard scientific procedure.

Chomsky stresses the point by way of comparing the study of meaning to the study of sound. Those studying phonetics seek to discover relations between internal phonological entities and external entities studied by the sciences (Chomsky, 2003b, p. 290). As touched on in chapter two, lexical items have phonetic properties which interact with the sensorimotor system. If the sensorimotor system is a kind of mediator between the phonological properties of lexical items and external events, it is possible to come up with theories of this relation. Chomsky does not claim that this attempt has been successful. However, he points out that if the phonologists were simply content with the commonsense “theory” in which an expression is simply matched with (our ordinary notion of) a “sound”, the interesting questions about the nature of these internal properties and their relation to entities posited by the sciences would not appear. The same holds, he claims, for the study of meaning. By sticking to the commonsense view that words refer to objects (either I-substances or other commonsense entities) we lose sight of the important aspects of the study of meaning in natural language. The way I read Chomsky, this has the implication that there are tractable ways in which one could study a relation between linguistic expressions and externalia. However, the entities need to be entities which accord with the entities postulated in the natural sciences (as in the case of sound), that is, the referential semanticist must come up with external semantic values that are useful to the Martian scientist (i.e. to naturalistic theories). Still, the prospects for a “classical” theory of reference are poor:

It is an open question whether something will emerge that is similar to the referential semantics devised for formal symbolic systems ... I know of no convincing reason to believe so, and would not be surprised if the quest turns out to be as illusory as the analogue is taken to be (without comment) on the



sound side. But far too little is understood to say anything with much confidence. (Chomsky, 2003b, p. 295)

So far, we have seen that Chomsky opens up for some theoretical inquiry into a relation between language and entities posited by scientific theories, but not between words and things like books, flaws and so on. Why does Chomsky believe this? Is Ludlow right that Chomsky is a scientific realist who only accepts the existence of things insofar as they figure in (for instance) physical and chemical theories? My own inclination is that Chomsky, rather than committing to a specific ontological position, is motivated by methodological considerations. The relevant question is not what exists, but what kinds of things are suitable to theorize about. If we want a naturalistic theory of language which can ultimately be unified with theories in the “core sciences”, the P-substances (in Ludlow’s vocabulary) are the only viable option.

In his reply to Ludlow, Chomsky discusses two different approaches to the study of language and mind with which we became familiar in chapter one. One is a branch of the natural sciences, and the other one is ethnoscience (both fall within naturalistic inquiry). The remarks made so far show that Chomsky thinks that the reference relation has no place within theories in the natural sciences (including cognitive psychology and linguistics). What is more, it does not amount to any metaphysical claims about the world. Is the same true for ethnoscience? Chomsky writes:

Suppose that ethnoscientific inquiry attributes to Jones internal non-linguistic concepts that are one-one associated with nominal phrases of his I-language, and concludes that these are the constituents of Jones’s commonsense understanding of the world. That is a metaphysical claim, on the order of the claim that an insect has a mechanism of path integration, or that Jones’s I-language has a phonological system that enables him to distinguish /r/ from /l/ (unlike his Japanese friend). (Chomsky, 2003b, p. 289)

Ethnoscience can tell us something about how humans think and relate to the world, but not about the world itself. Furthermore, Chomsky finds it highly implausible that ethnoscience would conclude that humans think of the relation between language and the world in the way Ludlow suggests.

In any case, the important thing to note is that Chomsky does not discuss any alternatives to these two approaches. Are there any other alternatives? Ludlow could, I think, reply to this that he is not interested in an ethnoscientific or naturalistic account of reference, but rather a

philosophical account which is consistent with I-languages. What ethnoscientific inquiry might reveal need not be relevant for Ludlow's ends. The results of ethnoscientific investigation have no absolute bearings on metaphysics (common beliefs amongst humans may very well be wrong). However, there is a line to be drawn here, seeing that common sense considerations often influence metaphysical judgments. Nevertheless, the departure from common sense in metaphysics is, I think, large enough to justify the assumption that these are entirely distinct matters. Thus, Ludlow's project, if understood as a philosophical project, is not targeted by these considerations.<sup>35</sup> I think, however, that Ludlow's theory aspires to be a naturalistic theory which sheds light on both metaphysics and I-language.

In chapter one we saw that Chomsky believes that the study of language and mind should be approached like any other natural phenomenon. In "Reply to Ludlow" he argues that within this approach the relation of reference between words and things in the world do no interesting theoretical work; it neither tells us anything interesting about the meanings of expressions nor about the external world. We will now turn to an argument which purports to establish that there can be no scientific theory of word-world relations.

## 6.2 Common Sense Concepts and Scientific Concepts

The following argument is in part based on Stainton's "Moderate Argument from Ontology". I will point to remarks by Chomsky when relevant, and I do think the considerations resemble his own. However, as far as I can see, he has not systematized the ideas into a complete argument.

This argument, like the argument against public words, aims to raise doubt about the idea of a referential word-world theory of meaning. This version is weaker, however, in that it accepts the existence of public words. The claim here is that there can be no *science* of a relation between public words and worldly objects (Stainton, 2008, p. 923). The argument rests on the idea that it makes sense to divide our concepts in two groups: The concepts of common sense, and the concepts of science. It seems that these two different sets of concepts are thought to

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<sup>35</sup> Of course, if we are content with a philosophical account which need not adhere to MN and the Chomskyan framework, we lose some motivation for adopting the I-language perspective. If we do not commit to I-language, it seems that this opens up for externalist proposals *a la* Putnam and Burge.

express two different perspectives (Stainton, 2008, p. 923-924). This is arguably based on Chomsky's idea about the science-forming faculty being a module of the mind/brain.

Let us take a brief look at the characteristics of the two different types of concepts. The concepts of common sense are, according to this view, a part of our biological endowment. They stem from innate features of the mind/brain, and are at the disposal of everyone. I understand this to mean that they are at the disposal of everyone in principle, or that most of these concepts are at everyone's disposal. Further, they involve references to human ways of looking at the world: hierarchies, rights and our internal states to name a few. Thus we have concepts of human rights, pain, water, and so on. Chomsky points to an example taken from Aristotle. We can ask what a house is and come up with a number of different definitions; a house has material properties (it is made of wood or stone, for instance) as well as functional properties (it is a building made with the purpose of sheltering humans or animals). He continues:

Houses have far more intricate properties, as does every "object," as we discover when we go beyond casual inspection ... The most elaborate dictionaries, monolingual or pedagogical, never give a hint of these properties, quite rightly; even if they had been noticed, spelling them out would only confuse the user, whose knowledge of these facts comes from "the original hand of nature," in Hume's apt phrase. (Chomsky, 2003b, p. 292)

We know, for instance, that houses are of such a nature that if we are near them, we are not at the same time in them, and vice versa (Chomsky, 2000, p. 35-36). The knowledge we have of the properties of a house thus extends far beyond what any dictionary can tell us because the ideas we have of such things are innate, or at least a product of conceptualization. The scientific concepts are, by contrast, not innate, but social constructions, and as such they must be learned. In addition, they are (more) objective; they capture the world "the way it is". The division corresponds to the division between I-substances and P-substances. The only exception is that there is, of course, a difference between a substance and a concept. Having the concept in itself does not entail that a corresponding substance exists. The scientific concepts have no obligations with regard to common sense opinions and concepts (Stainton 2008, p. 923-924). This may seem a little odd, given that Chomsky thinks of the science-forming faculty as just as innate as other cognitive systems, but we should understand this, I think, as saying that the ability for scientific reasoning is innate, but that the concepts used are technical and invented. This divide does strike one as rather crude, and one could easily reply that surely many so-called common sense concepts are invented as well. As touched on

earlier, Chomsky admits that currently we do not know much about the science-forming faculty. I will not pursue the (empirical) question of whether or not the hypothesis that humans have a SFF is true, but it should be noted that the success of this argument seems to turn on whether or not this is a suitable depiction of the structure of human cognition.

According to this view, then, the words and objects of common sense are real, in a common sense way, just like theatres, relatives, dishes and national parks are real. But they are not real in the sense that they are objective and useful to scientific theories. The issue this time is not whether the relata exist, but (as it were) what makes them exist: the worry is that the kind of socially constructed object that is London (and 'London'!), so highly dependent on human perspectives and interests as it is, cannot be seen by the peculiar instrument that is natural science. (Stainton, 2008, p. 925)

The way I read Stainton, he maintains that these commonsense concepts, in light of methodological naturalism, are as “invisible” to the linguist as cars and trains are to the physicist. So when Dummett, for instance, assumes the existence of a common language which includes common words with particular meanings, he is wrong according to the methodological naturalist, not because this common language does not exist (as the argument from the nonexistence of words claims) but because he makes use of this notion when building a theoretical foundation (with empirical implications) for the study of language.

It is not clear to me that Chomsky draws as strong a conclusion as Stainton. Chomsky opens up for the possibility that commonsense concepts can be studied naturalistically:

The question is not whether the concepts of common-sense understanding can themselves be studied in some branch of naturalistic inquiry; perhaps they can. Rather, it is whether in studying the natural world (for that matter, in studying these concepts, as part of the natural world), we view it from the standpoint provided by such concepts. Surely not. (Chomsky, 2000, p. 20)

I think this shows that one should separate two distinct questions. One is whether the concepts of common sense can figure in any way in naturalistic theories. Another is whether, when studying language and mind naturalistically, we should construct theories from the perspective of common sense. The answer to the latter is no, according to Chomsky. But it seems to me that he is open to a positive answer to the former. (We will return to this point.)

Stainton mentions four objections to this argument. In the following, I will only discuss the one I find to be the most interesting. This objection points out that one could object to the moderate argument from ontology that the divide between the scientific perspective and the common sense perspective, a crucial premise for the argument, is false. Why could not the

differences between these two perspectives be of degree, rather than kind (Stainton, 2008, p. 927)? Stainton mentions the motivation behind this; there are borderline cases, for instance sciences that fall somehow on both sides of the alleged divide, medicine and criminology, for example. Also, one could present a factual claim that involves both types of concepts, for instance the following sentence: ‘My cup of herbal tea boiled at 101.35 degrees centigrade’. (Stainton, 2008, p. 927). Here, the words ‘cup of herbal tea’ belong to the common sense vocabulary in being useless to science, highly influenced by and dependent on the human perspective, whilst the words ‘101.35 degrees centigrade’ form an expression that fits in with the scientific perspective, due to it being exact, austere, and more objective. So, on the face of it, it seems as if this divide is not as watertight as Chomskyans want us to believe. What could the Chomskyan reply? The reply that Stainton offers is threefold.

Firstly, Stainton writes, the argument does not require that the divide is “exclusive and exhaustive” (Stainton, 2008, p. 927). Why not? The idea is that as long as there remain objects “invisible to science”, the argument goes through because we need a science of language that can see all (or most) of the objects that can bear names (Stainton, 2008, p. 927). In order to assess this argument, we need to know what it means that objects are “invisible to science”. The locution is metaphorical; it is clear that taken literally, everything is invisible to science. Is “useless for science” better? I read him as saying that even if the difference between common sense and science is a matter of degree, there would still be lots of common sense objects and words that a science of language fails to make use of, and hence basing semantics on word-world relations is not tenable. That is, if we want referential semantics, it needs to be able to be systematized naturalistically (scientifically), but referential semantics would need to deal with common sense concepts, and these are arguably not scientifically tractable. Consequently, we should give up the project.

The second reply points out that the premise that science cannot see common sense objects can be replaced by a weaker premise, namely that: “there is no *single* science which can see (almost) every common sense object” (Stainton, 2008, p. 927) So, even if there were multiple sciences that, taken together, could see almost all the common sense objects, the argument still succeeds if we fail to find one science which can see all those objects. The reason for this is that the science of word-world relations would have to be a (single) science that could see all those common sense objects and words:

what is required, at a minimum, for a comprehensive scientific semantics that introduces word-world relations is *There exists a science x such that, for almost every y, x can see y*; but at best what is plausible is *For almost every y, there exists a science x, such that x can see y*. (Stainton, 2008, p. 927)

Instead of the imprecise “see”, we could say that for such a scientific referential semantics, we need it to be the case that there is a science x such that, for almost every y, y is an object that can be described scientifically by theories in x. This strong requirement for a referential semantic theory that it must be able to “see all objects” follows, I think, from the fact that the domain of semantics is language itself, all of human language, as opposed to other sciences.

Thirdly, Stainton points out that, to methodological naturalists, the requirements for calling an inquiry scientific are quite strong, so the objection may turn out to seem plausible only because the notion of science is used in a looser sense of the word than methodological naturalism allows. So, if we demand (as we do if we are methodological naturalists) of science that it seeks out explanatory theories and aims for integration with the core sciences, then even the weaker claim that “For almost every y, there exists a science x, such that x can see y”, may turn out to be less than plausible (Stainton, 2008, p. 927-928). Is there *any* science, in the strict sense of the word, in which even one of the following objects figure: beetles, tea cups, brothers-in-laws or curtains? According to this argument then, naturalistic study of language must avoid word-world relations because it is problematic to include common sense concepts in scientific theories and explanations.

Does this argument succeed? We saw earlier that we should distinguish between the idea that common sense concepts cannot figure in scientific theories at all and the claim that we should not view scientific theories from the perspective of such concepts. I contend that the former, which I take to be Stainton’s position, is too strong. Stainton claims that common sense concepts cannot figure in scientific theories; they are “invisible” to science. As we have seen, this places some rather rigid constraints on what is to count as science. Medicine and biology, for instance, do not satisfy this requirement. I see no problem with the idea that common sense concepts can enter into scientific studies. Take for instance a controlled study in which it is discovered that a certain kind of herbal tea can help patients who suffer from insomnia. The notion of herbal tea enters into the study, but in an unproblematic and innocuous way. It is, however, true that the concept of herbal tea itself does not enter into an *explanation* of why it cures insomnia. In explaining this scientifically we rely on scientific concepts – the chemical substance which is to be found in this particular blend of herbal tea, for example. Hence, the common sense concept figures in the study, but it plays no explanatory role. This

is compatible with Chomsky's stance. We have now weakened the premise and the emerging question is whether this version supports the conclusion that there can be no science of language which pairs words with things in the world.

One might think that having a semantic theory which involves word-world relations is not the same as the theory itself being a theory constructed from the perspective of common sense. One could argue that a semantic theory for natural language differs in relevant respects from other scientific theories. In a semantic theory the object of study is meanings of the expressions of natural language. By contrast, the objects of study in physics and chemistry are not the properties of linguistic items, but other aspects of the world. A semantic theory which involves word-world relations is not a theory of the objects themselves, but rather a theory of the relation between language and the world. In so far as we are to explain the meanings of expression in natural language, we must acknowledge that there is an important difference between the expression of natural language and expressions in scientific theories. As far as I can see, however, this conclusion is drawn too quickly. In so far as we seek a semantic theory which involves word-world relations, these relations are part of the meaning of the expression, and they are thus used to explain linguistic phenomena. Hence I think Chomsky is right in pointing out that such theories fall outside the scope of the natural sciences.

## **6.3 Concluding Remarks**

In this thesis I have asked whether the Chomskyan arguments against reference represent a threat to all kinds of referential semantics. After examining Chomsky's methodological and linguistic foundation in chapter one and two, I argued in chapter three that it is possible to study language without adhering to the tenets of methodological naturalism. I then discussed specific Chomskyan arguments targeting the notion of reference. We have seen that the argument from "Problems with the Referents" supports the conclusion that rather than the words of language referring to things, speakers can use words to refer to various things depending on context. It seems to me that, in addition to the purely methodological considerations, this is a point Chomsky puts heavy weight on in his criticism of referential semantics. But this poses a threat to referential semantics only if referential semantics is committed to the idea that there is a one to one correspondence between words and particular kinds of entities, namely P-substances. As far as I can see this is not a commitment referential semantics needs to make. However, I think Chomsky is right in emphasizing the fact that

most of the things persons typically talk about are products of human conceptualization. Therefore one should be reluctant to conclude that the relation between language and the world is a relation between language and the mind-independent world.

What, then, should we say about the accusation that these kinds of theories crucially involve context, intentions, and other kinds of phenomena which are unclear and too complex to be explained in a scientific theory? I think this is an acceptable claim, but its scope is restricted to naturalistic theories. It does not follow from this confession that there is nothing of interest to be said on the subject. (This is not to say that there are no challenges facing theories which involve word-world relations, for instance in providing a theoretically acceptable account of context dependence.) The Chomskyan arguments discussed in this thesis do not, either individually or taken together, entail that the only viable option in the study of semantics is to study relations between internal states of an individual.



# References

- Austin, J.L. 1961, "Performative Utterances" in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 136-145.
- Borg, E. 2009, "Must a Semantic Minimalist be a Semantic Internalist?", *Proceedings of the Aristotelian Society Supplementary Volume*, Volume 83, Issue 1, pp. 31-51.
- Burge, T. 1979, "Individualism and the Mental", *Midwest Studies in Philosophy*, Volume 4, Issue 1, pp. 73-121.
- ---. 2003, "Reply to Chomsky", in Hahn, M. and Ramberg, B. (eds.) *Reflections and Replies: Essays on the Philosophy of Tyler Burge*, The MIT Press, Cambridge, Mass., pp. 451-470.
- Chomsky, N. 1965, *Aspects of the Theory of Syntax*, The MIT Press, Cambridge, Mass.
- ---. 1980, *Rules and Representations*, Columbia University Press, New York.
- ---. 1981, *Lectures on Government and Binding: The Pisa Lectures*, Foris Publications, Dordrecht.
- ---. 1986, *Knowledge of Language: Its Nature, Origin, and Use*, Praeger Publishers, New York.
- ---. 1988, "Language and Problems of Knowledge". in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 675-693.
- ---. 1991, "Linguistics and Cognitive Science: Problems and Mysteries" in Kasher, A. (ed.), *The Chomskyan Turn*, Blackwell, Oxford.
- ---. 1994, "Noam Chomsky". in Guttenplan, S. (ed.), *A Companion to the Philosophy of Mind*, Blackwell, Oxford, pp. 153-167.
- ---. 2000, *New Horizons in the Study of Language and Mind*, Cambridge University Press, New York.
- ---. 2003a, "Reply to Egan", in Antony, L.M. and Hornstein, N. (eds.), *Chomsky and His Critics*, Blackwell, Oxford.
- ---. 2003b, "Reply to Ludlow", in Antony, L.M. and Hornstein, N. (eds.), *Chomsky and His Critics*, Blackwell, Oxford.
- ---. 2007, *On Language*, The New Press, New York.
- Collins, J. 2004, "Review of *Chomsky and his Critics*", *Erkenntnis*, 60, pp. 275-281.

- ---. 2008, *Chomsky: A Guide for the Perplexed*, Continuum, London.
- ---. 2009, "Methodology, not Metaphysics: Against Semantic Externalism", *Proceedings of the Aristotelian Society Supplementary Volume*, Volume 83, Issue 1, pp. 53-69.
- Davidson, D. 1967, "Truth and Meaning", *Synthese*, Volume 17, Issue 1, pp. 304-323.
- ---. 1977, "Reality Without Reference", *Dialectica*, Volume 31, Issue 3-4, pp. 247-258.
- ---. 1986, "A Nice Derangement of Epitaphs", reprinted in 2005, *Truth, Language, and History*, Oxford University Press, New York.
- ---. 1994, "The Social Aspect of Language", reprinted in 2005, *Truth, Language, and History*, Oxford University Press, New York.
- Davies, M. and Stone, T. 2002, "Chomsky Amongst the Philosophers", *Mind & Language*, Volume 17, Issue 3, pp. 276-289.
- Dummett, M. 1974, "What is a Theory of Meaning? (I)", reprinted in 1993, *The Seas of Language*, Oxford University Press, New York.
- ---. 1976, "What is a Theory of Meaning? (II)", reprinted in 1993, *The Seas of Language*, Oxford University Press, New York.
- ---. 1978, "What do I Know when I Know a Language?", reprinted in *The Seas of Language*, 1993, Oxford University Press, New York.
- ---. 1986, "A Nice Derangement of Epitaphs: Some comments on Davidson and Hacking", in Lepore E. (ed.) *Truth and interpretation*, Blackwell, Oxford.
- ---. 1991, *The Logical Basis of Metaphysics*, Harvard University Press, Cambridge, Mass.
- ---. 2010, *The Nature and Future of Philosophy*, Columbia University Press, New York.
- Egan, F. 2003, "Naturalistic Inquiry: Where does Mental Representation Fit in?", in Antony, L.M. and Hornstein, N. (eds.), *Chomsky and His Critics*, Blackwell, Oxford.
- Frege, G. 1879, *Begriffsschrift*, in Beaney, M. (ed.), 1997, *The Frege Reader*, Blackwell, Oxford, pp. 47-78.
- ---. 1892, "On Sense and Nominatum", in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 217-229.
- Glanzberg, M. "Truth", The Stanford Encyclopedia of Philosophy (Spring 2009 Edition), Zalta, E.N. (ed.), URL: <<http://plato.stanford.edu/archives/spr2009/entries/truth/>>.
- Grice, H. P. 1957, "Meaning", *The Philosophical Review*, Volume 66, Issue 3, pp. 377-388.
- Higginbotham, J. 1985, "On Semantics", *Linguistic Inquiry*, Volume 16, Issue 4, pp. 547-594.
- Hinzen, W. 2007, *An Essay on Names and Truth*, Oxford University Press, Oxford.

- Hobbes, T. 1889, *The English Works of Thomas Hobbes of Malmesbury: Volume 1*, Ed. by Molesworth, W., Longman, London.
- Jackendoff, R. 1987, *Consciousness and the Computational Mind*, The MIT Press, Cambridge, Mass.
- Knobe, J. and Nichols, S. 2008, *Experimental Philosophy*, Oxford University Press, New York.
- Larson, R. and Segal, G. 1995, *Knowledge of Meaning: An Introduction to Semantic Theory*, The MIT Press, Cambridge, Mass.
- Lewis, D. 1975, “Languages and Language”, in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 656-674.
- Ludlow, P. 2003, “Referential Semantics for I-languages?” in Antony, L.M. and Hornstein, N. (eds.), *Chomsky and his Critics*, Blackwell, Oxford.
- ---. 2011, *The Philosophy of Generative Linguistics*, Oxford University Press, Oxford.
- Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York
- Mill, J.S. 1843/2002, *A System of Logic: Ratiocinative and Inductive*, University Press of the Pacific, Honolulu.
- Pietroski, P. 2005, “Meaning Before Truth”, in Peter, G. and Preyer G. (eds.), *Contextualism in Philosophy: Knowledge, Meaning, and Truth*, Oxford University Press, New York, pp. 255-300.
- ---. 2008, “Minimalist Meaning, Internalist Interpretation”, in *Biolinguistics*, Volume 2, Issue 4, pp. 317–341.
- Putnam, H. 1973, “Meaning and Reference”, in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 306-313.
- ---. 1975, “The meaning of ‘meaning’” *In Mind, Language and Reality: Philosophical Papers, Volume 2*, Cambridge University Press, New York.
- Russell, B. 1905, “On Denoting”, in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 230-238.
- ---. 1918/1998, *The Philosophy of Logical Atomism*, Open Court Printing, Peru, Ill.
- ---. 1957, “Mr. Strawson on Referring”, in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 261-264.

- Smith, N. 2004, *Chomsky: Ideas and Ideals*, 2<sup>nd</sup> ed., Cambridge University Press, New York.
- Strawson, P.F. 1964, *Individuals: An Essay in Descriptive Metaphysics*, Routledge, London.
- Stainton, R. 2008, “Meaning and Reference: Some Chomskian Themes” in Lepore, E. and Smith, B.C. (eds.), *The Oxford Handbook of Philosophy of Language*, Oxford University Press, New York, pp. 913-940.
- Swift, J. 1726/2003, *Gulliver’s Travels*, Penguin Books, London.
- Tarski, A. 1944, “The Semantic Conception of Truth and the Foundations of Semantics”, in Martinich, A.P. (ed.) 2010, *The Philosophy of Language*, International Fifth Edition, Oxford University Press, New York, pp. 85-107.
- Van Fraassen, B.C. 1980, *The Scientific Image*, Clarendon Press, Oxford.
- Quine, W.V.O. 1948, “On What There Is”, *Review of Metaphysics* 2, pp. 21-38, reprinted in 1953, *From a Logical Point of View*, Harvard University Press, Cambridge, Mass.